

<b>DETAIL SUPPLEMENT No.</b>	<b>MUNICIPALITY</b>	<b>DETAIL TITLE</b>	<b>REVISED</b>
<b>501-1</b>	<b>MAG</b>	<b>Headwall</b>	
<b>501-2</b>	<b>MAG</b>	<b>Headwall</b>	
<b>501-3</b>	<b>MAG</b>	<b>Headwall 42" To 84" Pipe</b>	
<b>501-4</b>	<b>MAG</b>	<b>Headwall Irrigation 18" To 60" Pipe</b>	
<b>501-5</b>	<b>MAG</b>	<b>Headwall Drop Inlet</b>	
<b>502-1</b>	<b>MAG</b>	<b>Trash Rack</b>	
<b>502-2</b>	<b>MAG</b>	<b>Trash Rack</b>	
C-503	CH	Trash Rack/Access Barrier	11-19-1999
<b>503</b>	<b>MAG</b>	<b>Irrigation Standpipe</b>	
<b>504</b>	<b>MAG</b>	<b>Concrete Block Junction Box</b>	
<b>505</b>	<b>MAG</b>	<b>Concrete Pipe Collar</b>	
P1505	PH	Concrete Pipe Collar	07-19-2004
<b>506</b>	<b>MAG</b>	<b>Irrigation Valve Installation</b>	
<b>507</b>	<b>MAG</b>	<b>Encased Concrete Pipe (For Shallow Installation)</b>	
<b>510</b>	<b>MAG</b>	<b>Corrugated Metal Pipe and Installation</b>	
2554	SC	Concrete Invert Paving For Corrugated Metal Pipe And Pipe Arch	
<b>520</b>	<b>MAG</b>	<b>Storm Drain Manhole Base (48" and Smaller)</b>	
P1520	PH	Storm Drain Manhole Base 48" & Smaller	07-09-1992
2520	SC	Storm Drain Manhole Cover	
<b>521</b>	<b>MAG</b>	<b>Storm Drain Manhole Base (51" or Larger)</b>	
P1560	PH	Storm Sewer Manhole Base Transition 51" & Larger	08-06-1999
<b>522</b>	<b>MAG</b>	<b>Storm Drain Manhole Shaft</b>	
<b>523-1</b>	<b>MAG</b>	<b>Pressure Manhole</b>	
<b>523-2</b>	<b>MAG</b>	<b>Pressure Manhole</b>	
<b>524</b>	<b>MAG</b>	<b>Storm Drain Lateral Pipe Connections</b>	
P1576	PH	Cast In Place Pipe Lateral Pipe Connection	08-06-1999
P1577	PH	Small Storm Drain Lateral Connection of Catch Basin...	07-19-2004

P1578	PH	Large Rcp Storm Drain Lateral Or Catch Basin Connector Pipe...	07-19-2004
<b>530</b>	<b>MAG</b>	<b>3'-6" Curb Opening Catch Basin – Type 'A'</b>	
<b>531</b>	<b>MAG</b>	<b>5'-6" Curb Opening Catch Basin – Type 'B'</b>	
<b>532</b>	<b>MAG</b>	<b>8'-0" Curb Opening Catch Basin – Type 'C'</b>	
<b>533-1</b>	<b>MAG</b>	<b>Catch Basin Type 'D'</b>	
<b>533-2</b>	<b>MAG</b>	<b>Apron For Type 'D' Catch Basin</b>	
<b>533-3</b>	<b>MAG</b>	<b>Frame And Grate For Type 'D' Catch Basin</b>	
<b>533-4</b>	<b>MAG</b>	<b>7'-0" Curb Opening Catch Basin Type 'D' – Grate Details</b>	
<b>534-1</b>	<b>MAG</b>	<b>Catch Basin Type 'E'</b>	
<b>534-2</b>	<b>MAG</b>	<b>Catch Basin Type 'E' (Details)</b>	
<b>534-3</b>	<b>MAG</b>	<b>Catch Basin Type 'E' (Details)</b>	
<b>534-4</b>	<b>MAG</b>	<b>Catch Basin Type 'E' (Details)</b>	
M-64	ME	Double Catch Basin per MAG STD Detail 534 Type E	02-15-2005
<b>534-5</b>	<b>MAG</b>	<b>Alternate Grate Styles Sump Location</b>	
<b>535</b>	<b>MAG</b>	<b>Catch Basin Type 'F' (For Use Without Curb)</b>	
<b>536-1</b>	<b>MAG</b>	<b>Common Details And Sections For Curb Opening Catch Basins</b>	
<b>536-2</b>	<b>MAG</b>	<b>Alternate Cover For Curb Opening Catch Basins</b>	
C-505	CH	Catch Basin Access Frame And Cover	11-19-1999
G-3530	GO	Catch Basin Access Frame And Cover	07-1997
P1561	PH	Frame And Cover Catch Basin Access	07-03-2000
<b>537</b>	<b>MAG</b>	<b>Catch Basin – Type 'G'</b>	
<b>538</b>	<b>MAG</b>	<b>Catch Basin – Type 'H'</b>	
<b>539</b>	<b>MAG</b>	<b>Grates For Catch Basins, Type G And H</b>	
<b>5440-1</b>	<b>MAG</b>	<b>Catch Basin Grates</b>	
<b>540-2</b>	<b>MAG</b>	<b>Catch Basin Grates</b>	
C-506	CH	Catch Basin Grates	11-19-1999
2535	SC	Catch Basin Grates	06-19-1995

<b>541</b>	<b>MAG</b>	<b>Catch Basin Sub-grade Drain</b>	
P1575	PH	Construction Sub-grade Drain	07-09-1992
<b>545</b>	<b>MAG</b>	<b>End Section-Reinforced Concrete Pipe</b>	
<b>550</b>	<b>MAG</b>	<b>Spillway Inlet And Outlet</b>	
<b>552</b>	<b>MAG</b>	<b>Concrete Cut-Off Walls</b>	
G-3520	GO	Cut-Off Wall	07-1997
<b>555</b>	<b>MAG</b>	<b>Erosion Protection/Riprap</b>	
2515-1	SC	Wall Opening & Erosion Protection – Type 1	02-27-2001
2515-2	SC	Drainage Grate At Block Wall	02-27-2001
2515-3	SC	Wall Opening Erosion Protection	02-27-2001

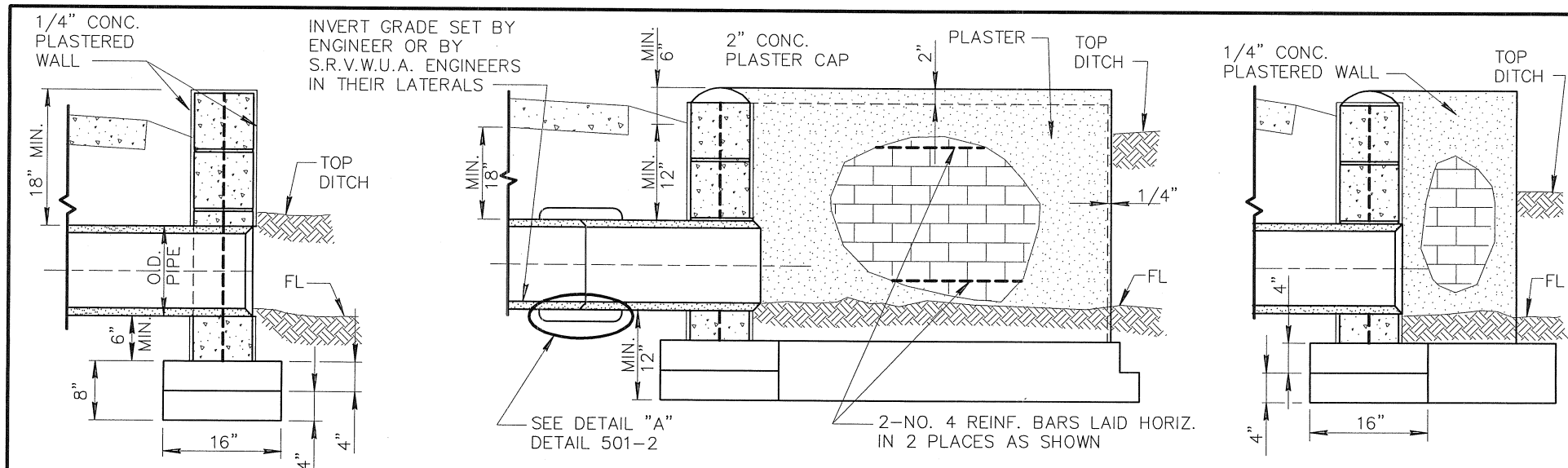
**Series 500- Irrigation and Storm Drain Information – Miscellaneous Detail Supplements**

C-501	CH	Dry Well System Detail And Specifications	01-11-2002
C-502	CH	Dry Well System	01-11-2002
C-504	CH	Retention Basin Inlet	01-11-2002
C-507	CH	Below Grade Retention Basin Inlet (Bubbler Box)	01-11-1999
C-507 (2)	CH	Below Grade Retention Basin Inlet (Bubbler Box)	01-11-1999
C-507 (3)	CH	Below Grade Retention Basin Inlet (Bubbler Box)	01-11-1999
G-3531	GO	Barrier Specifications Schedule	07-1997
G-3535-1	GO	Catch Basin Type ‘M’	07-1997
G-3535-2	GO	M’ Basin Top Modification In Landscape Parkway	07-1997
P1562	PH	Barrier Specification Schedule	08-08-2003
P1563	PH	Storm Sewer Access Barrier	07-19-2004
P1564	PH	Catch Basin Grate Frames	07-09-1992
P1565	PH	Catch Basin Grates	07-09-1992
P1566	PH	Catch Basin Combination Type ‘J’ With Concrete Apron	07-19-2004
P1567	PH	Catch Basin Combination – Type ‘K’	07-19-2004
P1568	PH	Catch Basin – Type ‘L’ Curb And Parkway Opening Inlet Details	07-19-2004
P1569-1	PH	Catch Basin Type ‘M’	07-19-2004
P1569-2	PH	Catch Basin Type ‘M’ Tope Modification In Landscape Parkway	07-19-2004

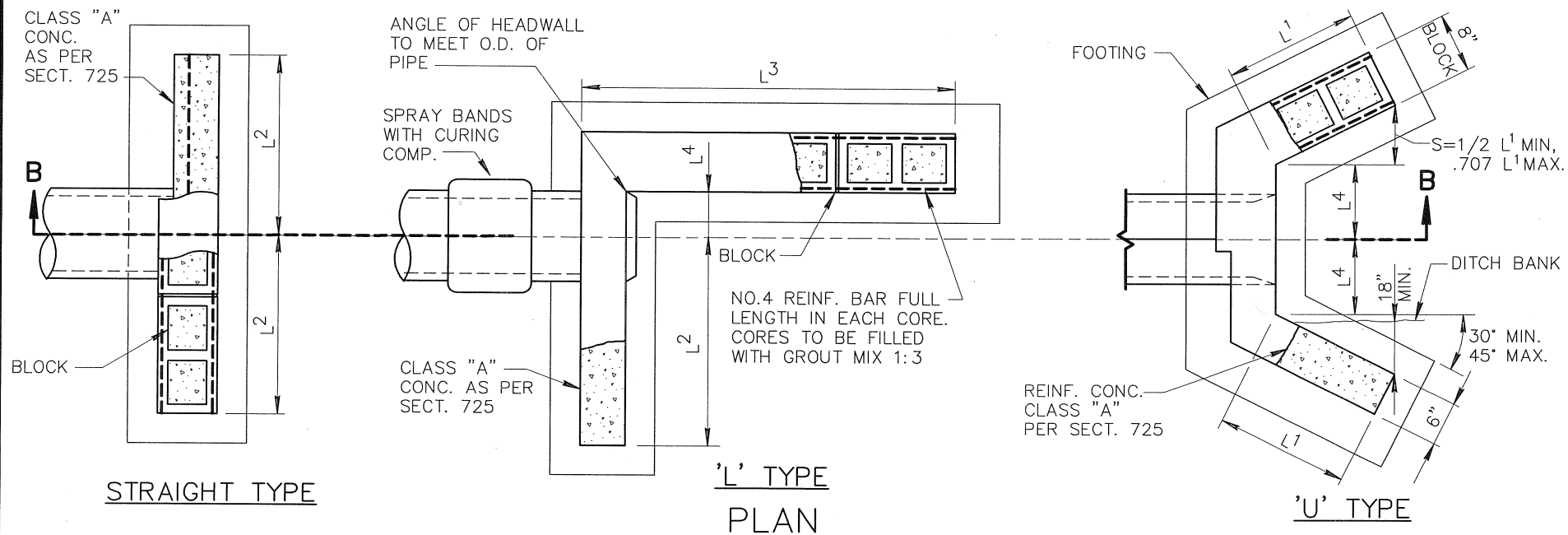
## Series 500: Irrigation and Storm Drain Information Detail Supplements

P1570	PH	Catch Basin – Type ‘N’	07-19-2004
P1571	PH	Catch Basin – Type ‘P’ Double Curb Opening For Frontage Rd Islands	07-19-2004
P1572	PH	Catch Basin – Type ‘Q’	07-19-2004
P1573	PH	Catch Basin – Type ‘R’	07-09-1992
P1574	PH	Inlet Curb Opening & Pipe Entry Detail	07-09-1992
P1581	PH	Type M Modified Catch Basin	07-03-2000
P1583	PH	Type R Modified Catch Basin (With Rear Inlet)	07-03-2000
P1584	PH	Type R Modified Catch Basin (With Wing and Offset Opening)	06-27-2001
2560-1	SC	Storm Drain Inlet Marker	
2560-2	SC	Storm Drain Inlet Marker On Headwall	
2560-3	SC	Storm Drain Inlet Marker On Catch Basin/Scupper	
2562-1	SC	Storm Sewer Outfall Access Barrier	03-28-2002
2562-2	SC	Barrier Specifications Schedule	03-28-2002





## SECTION B-B



DETAIL NO.

501-1



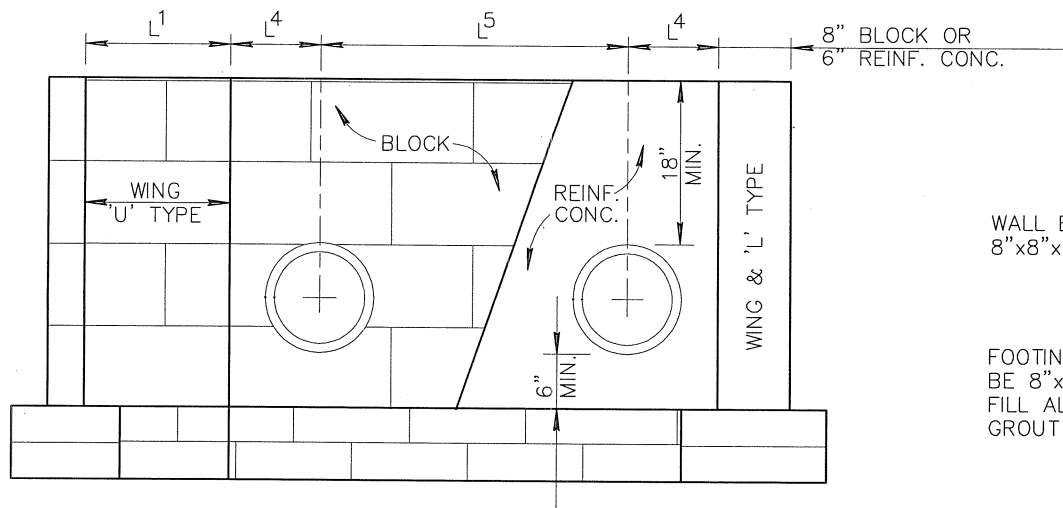
STANDARD DETAIL  
ENGLISH

HEADWALL

REVISED

DETAIL NO.

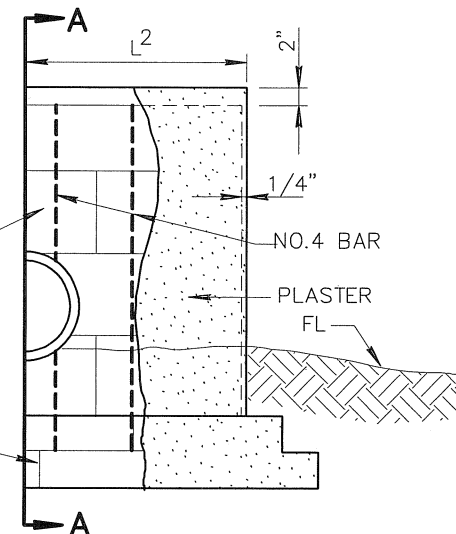
501-1



**DOUBLE PIPE HEADWALL**

WALL BLOCKS TO BE  
8"x8"x16"

FOOTING BLOCKS TO BE 8"x8"x16".  
FILL ALL CORES WITH  
GROUT MIX 1:3.



**ELEVATION**

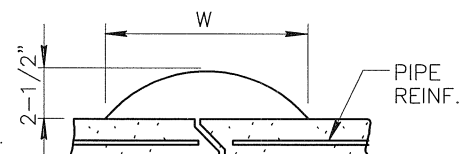
CONCRETE MASONRY UNITS (BLOCK)  
HEADWALLS JOINED WITH CEMENT MORTAR  
AND CONCRETE PLASTERED BOTH SIDES  
OF WALL FULL HEIGHT AND SHALL  
BE CURED PER SECT. 726.

**NOTES:**

1. ALL CONCRETE SHALL BE CLASS 'A' PER SECT. 505 & 725.
2. CONCRETE MASONRY UNITS (BLOCK) PER SECT. 510, 775 & 776.
3. CONCRETE REINF. SHALL BE NO.4 BAR 12" O.C. BOTH WAYS.

HEADWALL DIMENSIONS					
*NOMINAL PIPE SIZE	L <sup>1</sup>	L <sup>2</sup>	L <sup>3</sup>	L <sup>4</sup>	L <sup>5</sup>
12"	1'-4"	2'-0"	3'-8"	0'-10"	2'-10"
15"	2'-0"	2'-8"	4'-0"	1'-0"	3'-0"
18"	2'-0"	3'-8"	4'-8"	1'-2"	3'-4"
21"	2'-8"	4'-0"	5'-4"	1'-3"	3'-8"
24"	2'-8"	4'-0"	5'-4"	1'-6"	3'-11"
30"	2'-8"	5'-4"	6'-8"	1'-10"	4'-7"
36"	3'-4"	6'-8"	8'-0"	1'-10"	5'-2"
42"	4'-0"	8'-0"	9'-4"	2'-2"	5'-9"

\* NOMINAL PIPE SIZE GIVEN FOR REINFORCED CONC. PIPE.



PIPE SIZE	W
12" - 21" INCL.	11"
24" - 42" INCL.	13"

**DETAIL "A"**

DETAIL NO.

**501-2**



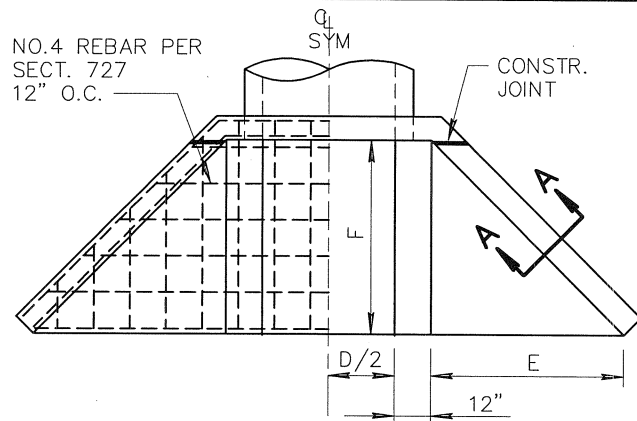
**STANDARD DETAIL  
ENGLISH**

**HEADWALL**

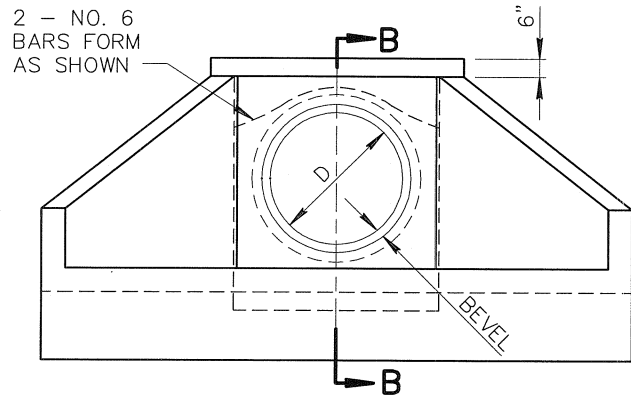
REVISED

DETAIL NO.

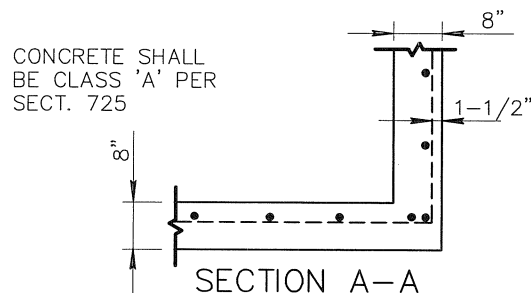
**501-2**



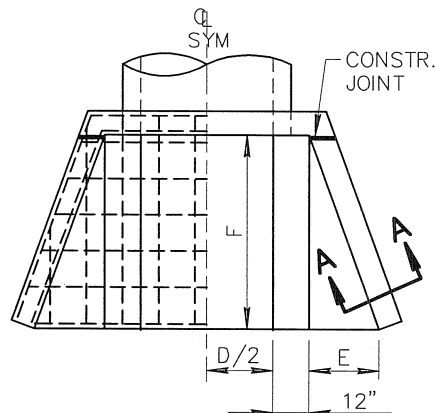
INLET HEADWALL



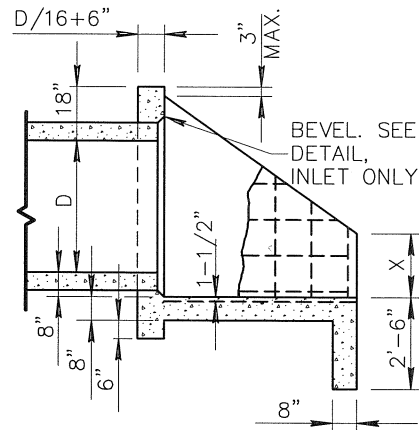
INLET HEADWALL FACE ELEVATION  
OUTLET SIMILAR



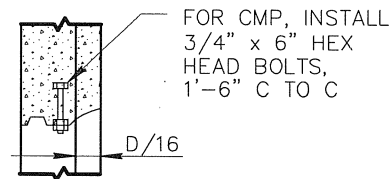
SECTION A-A



OUTLET HEADWALL



SECTION B-B



CMP BEVEL DETAIL

1:1 1/2 EMBANKMENT SLOPE

D	TYPE *	DIMENSIONS		
		F	E	X
42"	1 (IN)	5'-2"	5'-2"	1'-9"
	2 (OUT)	5'-2"	1'-11"	1'-9"
48"	3 (IN)	5'-8"	5'-8"	1'-11"
	4 (OUT)	5'-8"	2'-1"	1'-11"
54"	5 (IN)	6'-2"	6'-2"	2'-1"
	6 (OUT)	6'-2"	2'-3"	2'-1"
60"	7 (IN)	6'-8"	6'-8"	2'-3"
	8 (OUT)	6'-8"	2'-5"	2'-3"
66"	9 (IN)	7'-2"	7'-2"	2'-5"
	10 (OUT)	7'-2"	2'-7"	2'-5"
72"	11 (IN)	7'-8"	7'-8"	2'-7"
	12 (OUT)	7'-8"	2'-9"	2'-7"
78"	13 (IN)	8'-2"	8'-2"	2'-9"
	14 (OUT)	8'-2"	3'-0"	2'-9"
84"	15 (IN)	8'-8"	8'-8"	2'-11"
	16 (OUT)	8'-8"	3'-2"	2'-11"

1:4 EMBANKMENT SLOPE

D	TYPE *	DIMENSIONS		
		F	E	X
42"	17 (IN)	8'-8"	8'-8"	3'-0"
	18 (OUT)	8'-8"	3'-2"	3'-0"
48"	19 (IN)	8'-8"	8'-8"	3'-6"
	20 (OUT)	8'-8"	3'-2"	3'-6"
54"	21 (IN)	8'-8"	8'-8"	4'-0"
	22 (OUT)	8'-8"	3'-2"	4'-0"
60"	23 (IN)	9'-4"	9'-4"	4'-4"
	24 (OUT)	9'-4"	3'-5"	4'-4"
66"	25 (IN)	9'-8"	9'-8"	4'-9"
	26 (OUT)	9'-8"	3'-6"	4'-9"
72"	27 (IN)	9'-8"	9'-8"	5'-3"
	28 (OUT)	9'-8"	3'-6"	5'-3"
78"	29 (IN)	10'-0"	10'-0"	5'-8"
	30 (OUT)	10'-0"	3'-8"	5'-8"
84"	31 (IN)	10'-8"	10'-8"	6'-0"
	32 (OUT)	10'-8"	3'-11"	6'-0"

\* (IN) REFERS TO INLET  
(OUT) REFERS TO OUTLET

DETAIL NO.

501-3



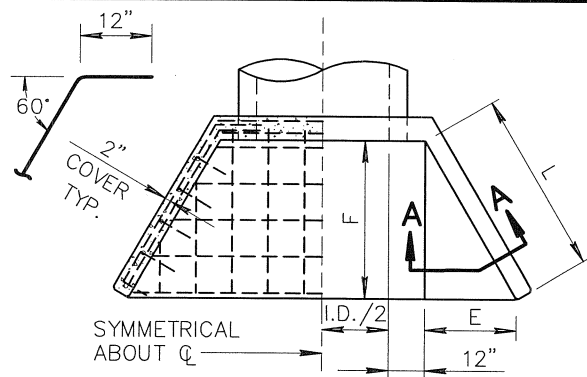
STANDARD DETAIL  
ENGLISH

HEADWALL 42" TO 84" PIPE

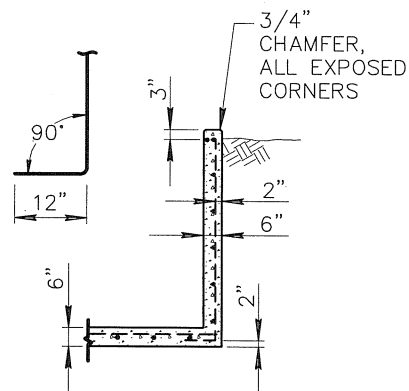
REVISED

DETAIL NO.

501-3

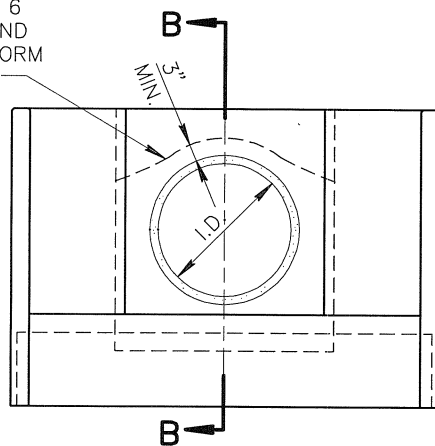


PLAN

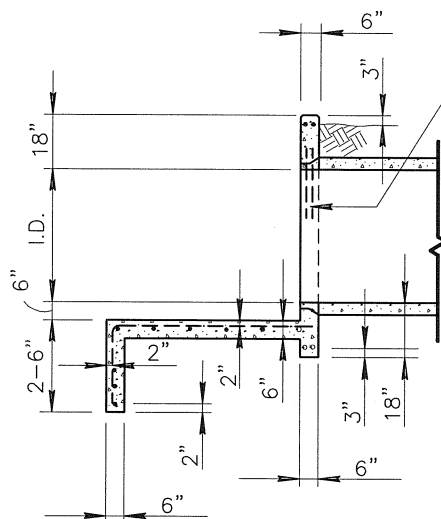


SECTION A-A

2 - NO. 6  
BARS BEND  
TO CONFORM  
TO PIPE



ELEVATION



SECTION B-B

2 - NO. 6 BARS  
BEND TO CONFORM  
TO PIPE

PIPE I.D.	DIMENSIONS		
	L	E	F (APPROX)
18"	2'-0"	1'-0"	1'-9"
24"	2'-0"	1'-0"	1'-9"
30"	3'-0"	1'-6"	2'-7"
36"	4'-0"	2'-0"	3'-6"
42"	5'-0"	2'-6"	4'-4"
48"	6'-0"	3'-0"	5'-2"
54"	7'-0"	3'-6"	6'-1"
60"	8'-0"	4'-0"	6'-11"

### NOTES:

1. ALL CONCRETE SHALL BE CLASS 'A' PER SECT. 725.
2. ALL REINFORCING BARS SHALL BE NO. 4 EXCEPT NO. 6 BARS OVER PIPE. BAR SPACING APPROXIMATELY 12" C TO C UNLESS OTHERWISE NOTED.
3. 30° WING WALL FLARE SHOWN; 45° NORMALLY DESIRABLE.

DETAIL NO.  
501-4

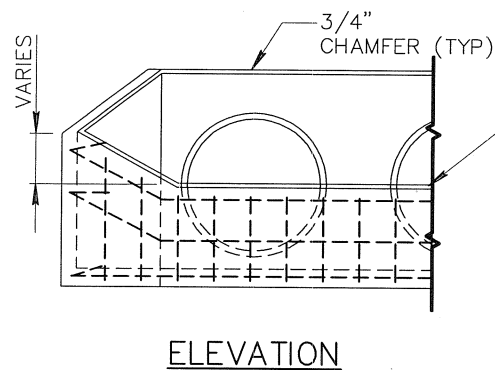
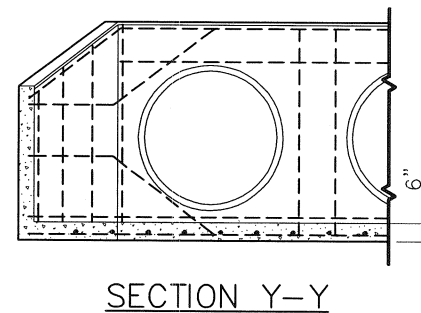
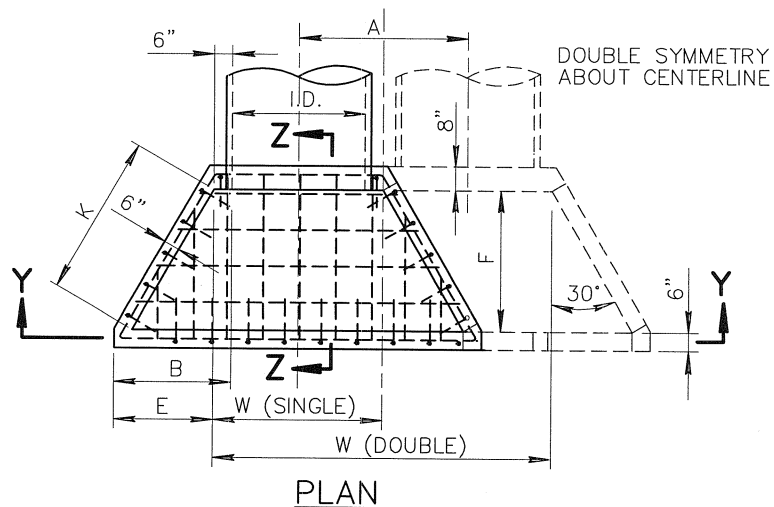


STANDARD DETAIL  
ENGLISH

HEADWALL IRRIGATION  
18" TO 60" PIPE

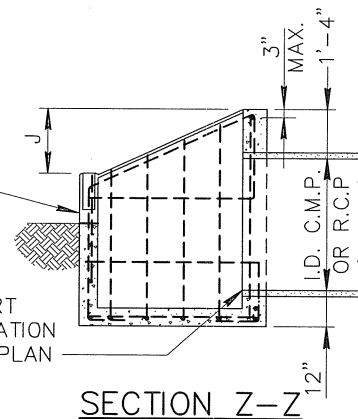
REVISED

DETAIL NO.  
501-4



ELEVATION  
PER PLAN

INVERT  
ELEVATION  
PER PLAN



#### NOTES:

1. HIGH POINT OF HEADWALL SHALL NOT PROJECT MORE THAN 3" ABOVE SLOPE.
2. ALL CONCRETE SHALL BE CLASS 'A' PER SECT. 725.
3. ALL REINFORCING BARS SHALL BE NO. 4, 12" C TO C AND 3" CLEAR TO INSIDE OF FLOOR AND WALLS.

PIPE I.D.	DIMENSIONS							
	W		A	B	E	F	J	K
	SINGLE	DOUBLE						
18"	2'-6"	5'-2"	2'-8"	1'-3"	0'-9"	1'-3.5/8"	9"	1'-6"
24"	3'-0"	6'-6"	3'-6"	1'-7.1/2"	1'-1.1/2"	1'-11.3/8"	11"	2'-3"
30"	3'-6"	7'-10"	4'-4"	2'-0"	1'-6"	2'-7.1/4"	1'-1"	3'-0"
36"	4'-0"	9'-2"	5'-2"	2'-4.1/2"	1'-10.1/2"	3'-3"	1'-4"	3'-9"
42"	4'-6"	10'-6"	6'-0"	2'-9"	2'-3"	3'-10.3/4"	1'-6"	4'-6"

DETAIL NO.

501-5



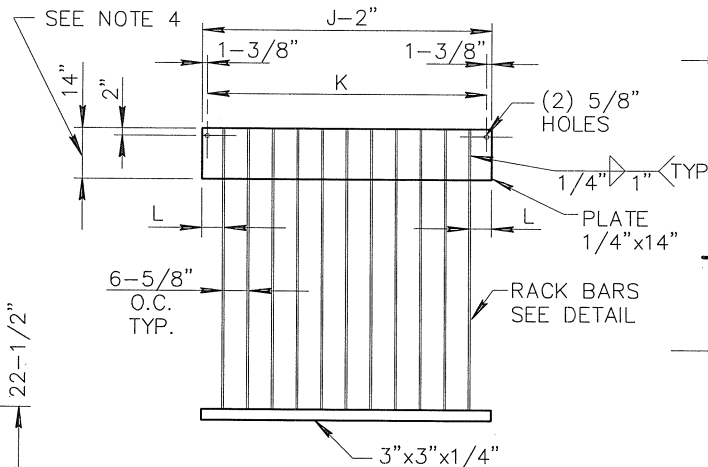
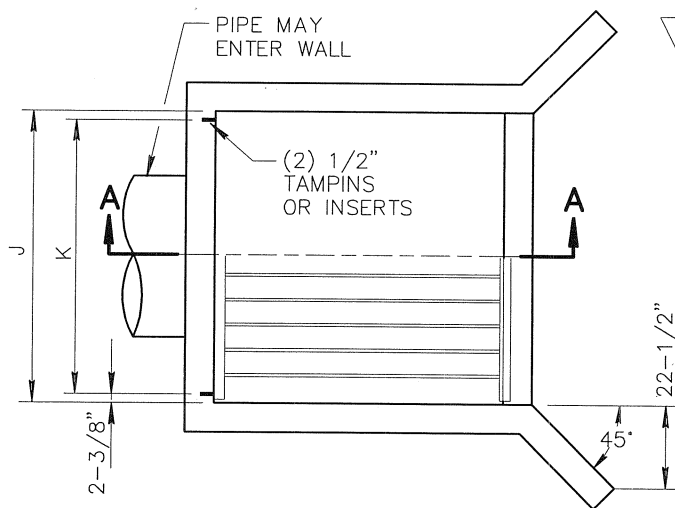
STANDARD DETAIL  
ENGLISH

HEADWALL DROP INLET

REVISED

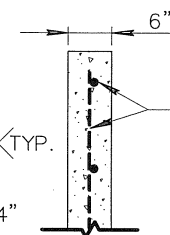
DETAIL NO.

501-5



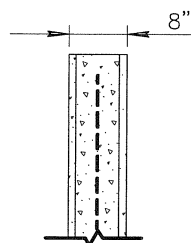
TRASH RACK

## POURED WALLS

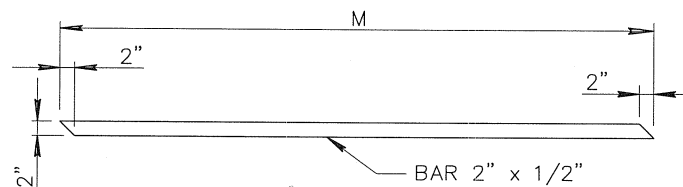


NO. 4 REINFORCED BARS 12" O.C. BOTH WAYS, CLASS 'A' CONC PER SECT. 505, 725 & 727.

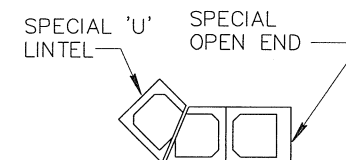
## BLOCK WALLS



BLOCK HEADWALL TO HAVE ONE NO.4 REINF. BAR CENTERED IN EACH CORE FOR FULL HEIGHT AND CORES FILLED WITH CONCRETE OR CEMENT GROUT (3:1 RATIO). ALL BLOCKS TO BE JOINTED WITH MORTAR. PLASTERED ON EXPOSED SURFACES THEN SPRAY WITH WHITE PIGMENTED CURING COMPOUND. SECT. 510, 727 & 776.



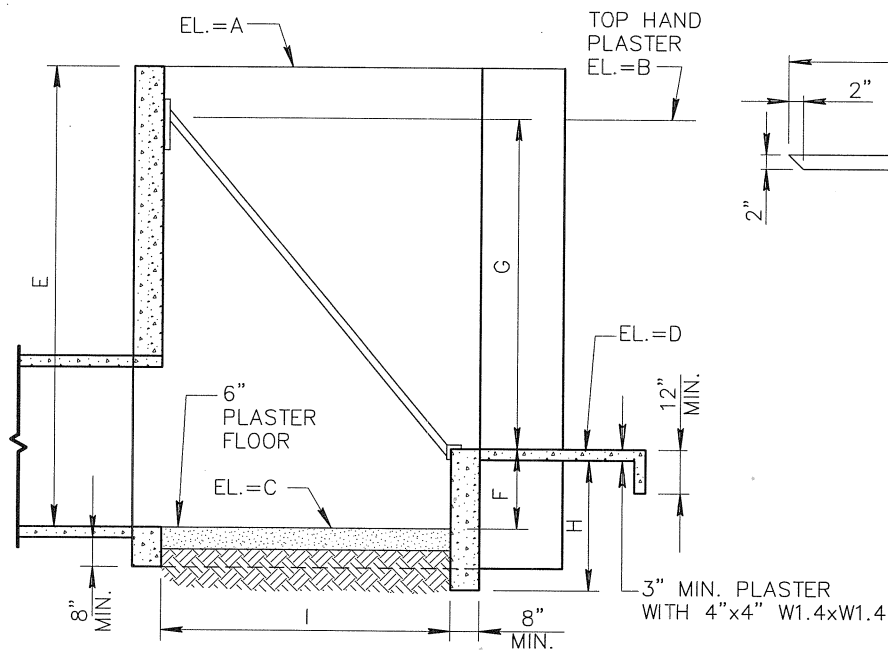
RACK BARS



45° BLOCK CORNER

## NOTES:

1. REMOVE ALL SCALE FROM RACK BARS. METAL SPRAY OR PAINT WITH ONE COAT ZINC CHROMATE OR RED LEAD PRIMER (INDUSTRIAL QUALITY). OVERCOAT WITH GREY INDUSTRIAL ENAMEL SECT. 790.
2. SHAPE, COMPACT AND PLASTER NEW DITCH FROM HEADWALL TO UNDISTURBED EXISTING DITCH. PLASTER TO EXTEND TO MINIMUM ELEVATION NOTED 3 FEET BEYOND CONNECTION TO UNDISTURBED EXISTING DITCH.
3. ELEVATIONS A, B, C & D AND DIMENSIONS E, F, G, H, I, J, K, L & M WILL BE SHOWN ON PLANS. DIMENSIONS SHOULD PROVIDE STANDARD SIZE BLOCK.
4. 14" PLATE SHALL NOT EXTEND BELOW TOP OF PIPE.



SECTION A-A

DETAIL NO.

502-1



STANDARD DETAIL  
ENGLISH

TRASH RACK

REVISED

DETAIL NO.

502-1

CONCRETE MANSIONRY  
UNITS (BLOCK)

REINF. CONC.  
CLASS 'A' PER  
SECT. 725

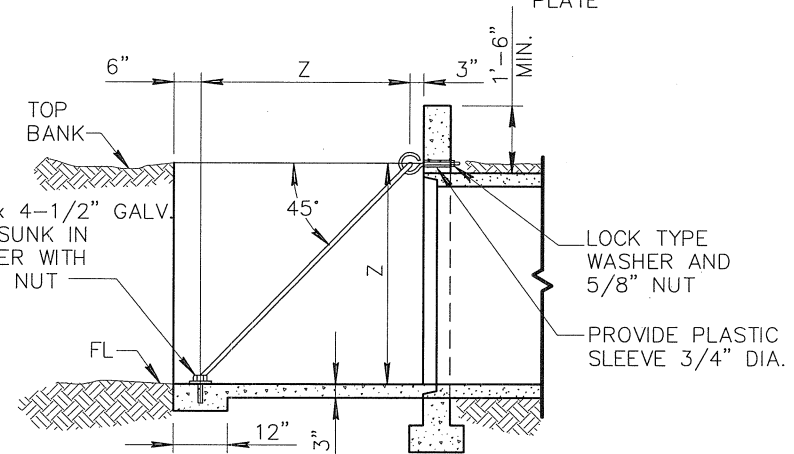
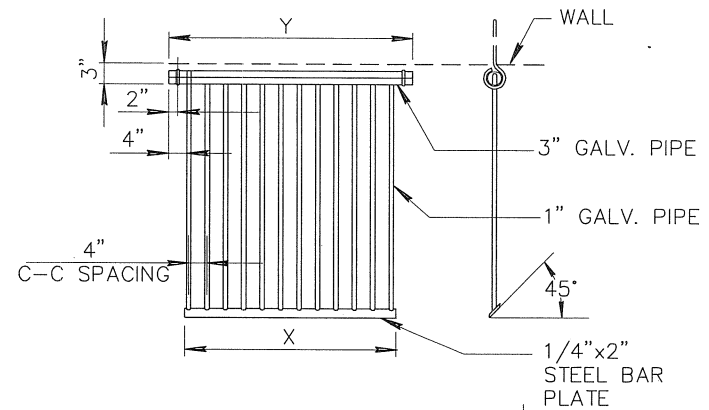
STRAIGHT  
TYPE

'U' TYPE

CONC. LINING  
THICKNESS 1-1/2"  
MIN., 2" MAX.

12" TYP.

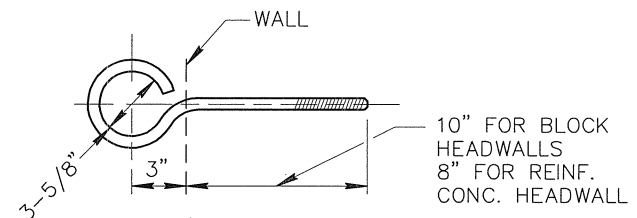
SLOPE  
1:1 MIN.  
1:1.5 MAX.



SECTION A-A

TYPE BASED ON PIPE SIZE

TYPE	PIPE SIZE	NO. OF BARS	LENGTH OF BARS	DIMENSIONS		
				X	Y	Z
A	18"	6	3'-7"	1'-9"	2'-5"	2'-5"
	24"	8	3'-7"	2'-5"	3'-1"	2'-5"
B	30"	10	4'-4 1/4"	3'-1"	3'-9"	2'-11 1/2"
C	36"	10	5'-1 1/2"	3'-1"	3'-9"	3'-6"
D	42"	12	5'-10 5/8"	3'-9"	4'-5"	4'-0 1/2"
E	48"	14	6'-7 3/4"	4'-5"	5'-1"	4'-7"



EYE BOLT

DETAIL NO.

502-2



STANDARD DETAIL  
ENGLISH

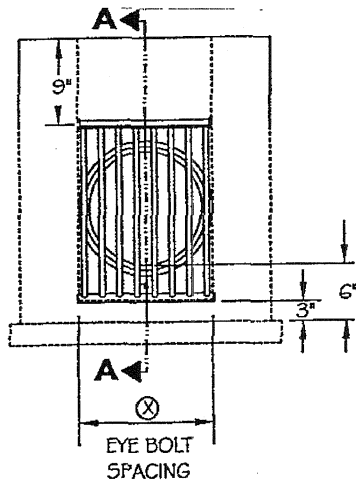
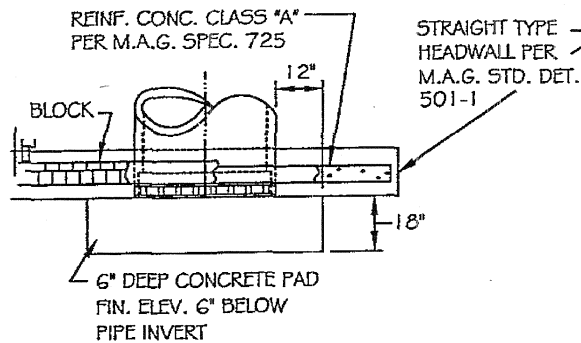
TRASH RACK

REVISED

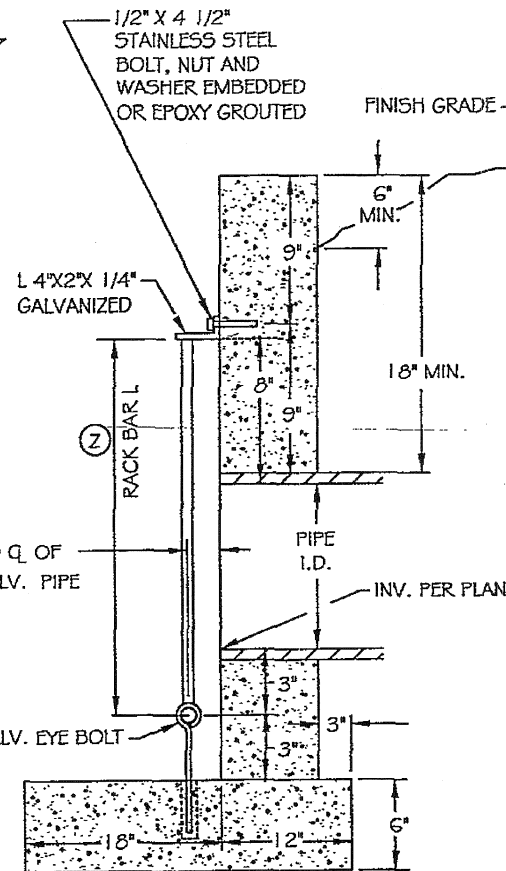
01-01-2004

DETAIL NO.

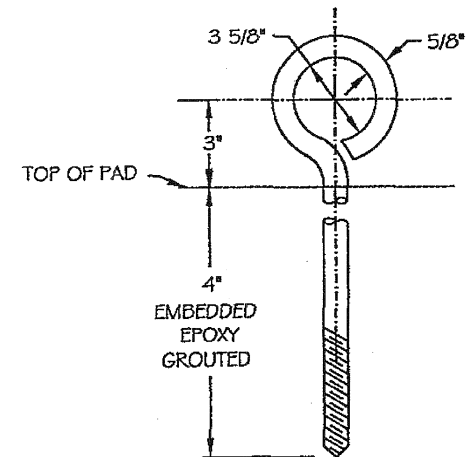
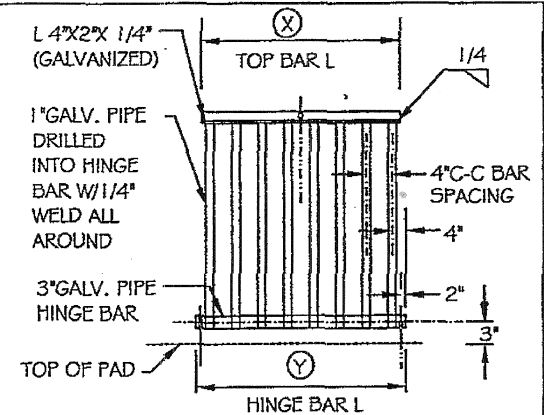
502-2



STRAIGHT TYPE  
HEADWALL PER  
M.A.G. STD. DET.  
501-1



**SECTION A-A**



**EYE BOLT**

TYPICAL DIMENSIONS					
TYPE	PIPE DIA.	NO. OF BARS (I.D./4 + 1)	DIMENSIONS		
			X	Y	Z
A	15"	5	21"	25"	26"
	18"	6	25"	29"	29"

\* ROUND UP TO NEXT FULL NUMBER

OTHER BAR SIZES	
DIMENSIONS	
X =	(# BARS X 4") + 1"
Y =	X + 4"
Z =	I.D. + 3" + 8" (UP TO 4' 0")

**NOTES:**

1. THIS DETAIL IS APPLICABLE AT ALL OPEN ENDS OF PIPE 12" OR MORE IN DIAMETER.
2. COAT ALL WELD AREAS WITH ZINC RICH PAINT.
3. DESIGN ENGINEER TO PROVIDE DETAILS FOR PIPE I.D.'S GREATER THAN 4' IN DIAMETER.

DETAIL NO.

**C-503**

NTS



CITY OF  
CHANDLER  
STANDARD  
DETAIL

**TRASH RACK/ACCESS BARRIER**

APPROVED:

*Raymond D. Dettus*  
CITY ENGINEER

DATE: 11-19-99

DETAIL NO.

**C-503**

NTS



NOTE:  
PAINT COVER BOTH SIDES  
ONE PRIME COAT, TWO  
FINISH COATS, SECT.  
790, PAINT NO. 9

10 GAUGE SHEET  
STEEL COVER

HANDLE EXTENDS  
6" BELOW  
TOP WHEN GATE  
IS OPEN

STANDARD  
CONCRETE  
PIPE

CONCRETE AS  
REQUIRED TO  
SECURE GATE

FINISH  
GRADE

VARIABLE

(2) 5/16"  
HOLES  
4" O.C.

2-1/2"

1/4" ROD  
HANDLE

2-1/2"

30"  
UNLESS OTHERWISE  
SPECIFIED

GROUT  
JOINTS  
WATER  
TIGHT

GATE TYPE,  
SIZE AND NO.  
REQUIRED AS  
GIVEN ON PLANS

SIZE OF PIPE  
AS SHOWN  
ON PLANS

TYPE 'A'

## NOTES:

1. BRACE TO BE INSTALLED EVERY 2' FROM TOP OF HEADGATE FRAME. BOTTOM BRACE TO BE HIGH ENOUGH TO ENABLE FULL OPENING OF HEADGATE.
2. INSTALL 1/2" BOLTS INTO LEAD PLUG DRILLED TO WITHIN 1" OF OUT SIDE OF STANDPIPE. SPACERS TO BE INSTALLED AT EACH BOLT BETWEEN HEADGATE FRAME AND INSIDE OF STAND PIPE.
3. LOCATION OF 2" HOLE FOR GATE STEM TO BE DETERMINED AFTER INSTALLATION OF GATE.
4. CONCRETE SHALL BE CLASS A PER SECT. 725.

PAINT ARROW ON OUTSIDE OF  
STANDPIPE INDICATING DIRECTION  
"TO OPEN" HEADGATE.

SEE NOTE 3

(4) 3/8" BOLTS TO BE  
GROUTED INTO STANDPIPE  
EQUI-DISTANT WITH  
1-1/2"x3" RECTANGULAR  
WASHERS AND NUTS

GALVANIZED EXPANDED  
METAL LID (9 GAUGE)

SEE NOTE 2

REINF. CONC.  
PIPE

VARIES  
48" MIN.  
52" MAX.

SEE NOTE 1

GROUT JOINTS  
WATER TIGHT

FINISH  
GRADE

1" C.R.S.  
LIFT ROD

HEADGATE TO  
BE SWANSON  
800 SERIES  
OR APPROVED  
EQUAL

FORM CONC. AROUND  
END OF PIPE BEHIND  
HEADGATE FRAME

TYPE 'B'

DETAIL NO.

503



MARICOPA  
ASSOCIATION of  
GOVERNMENTS

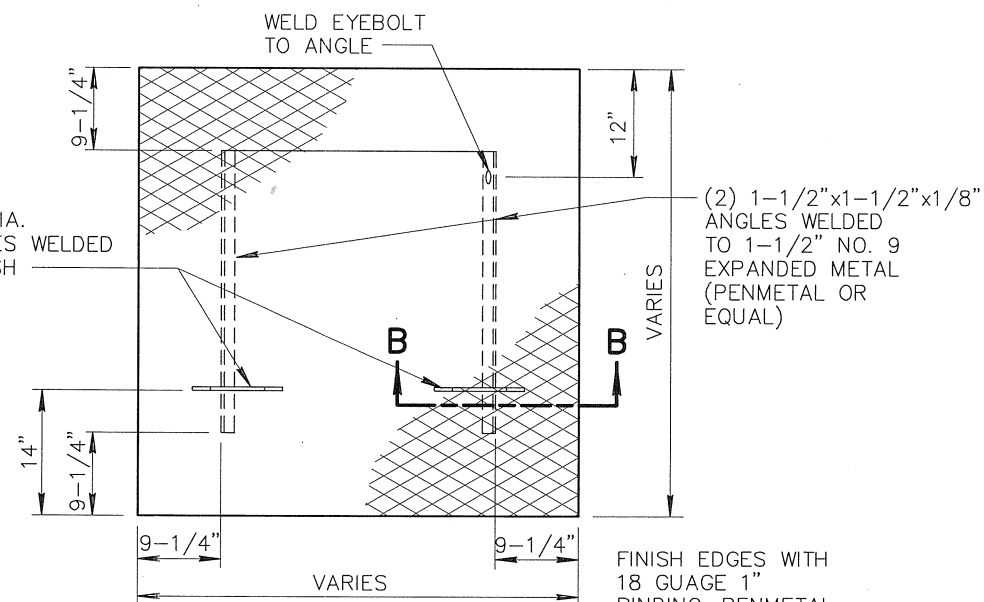
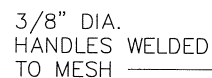
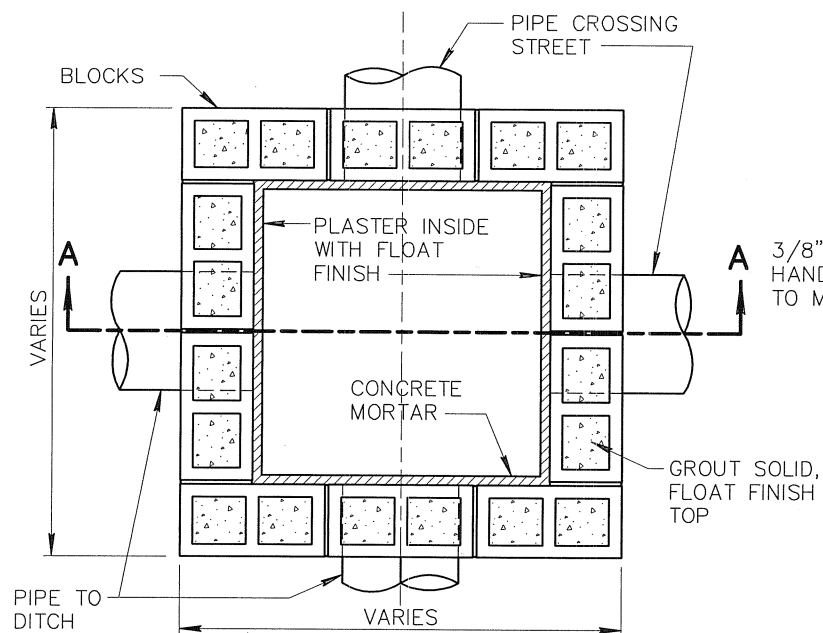
STANDARD DETAIL  
ENGLISH

IRRIGATION STANDPIPE

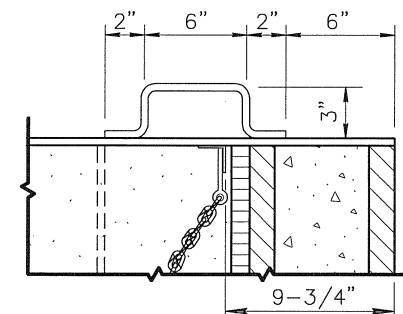
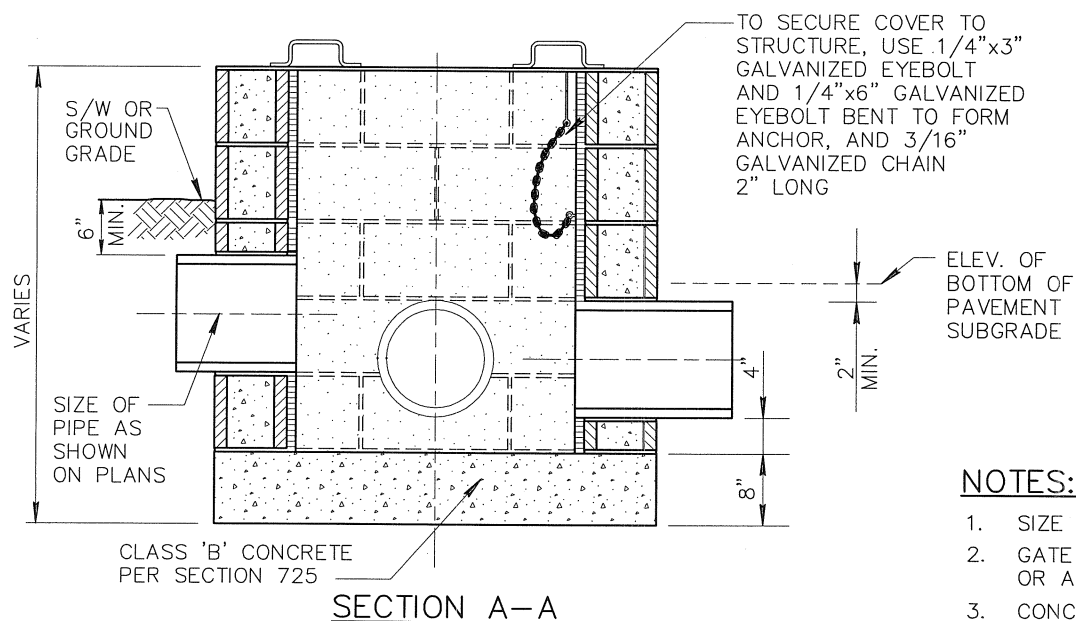
REVISED

DETAIL NO.

503



PLAN OF COVER



SECTION B-B

NOTES:

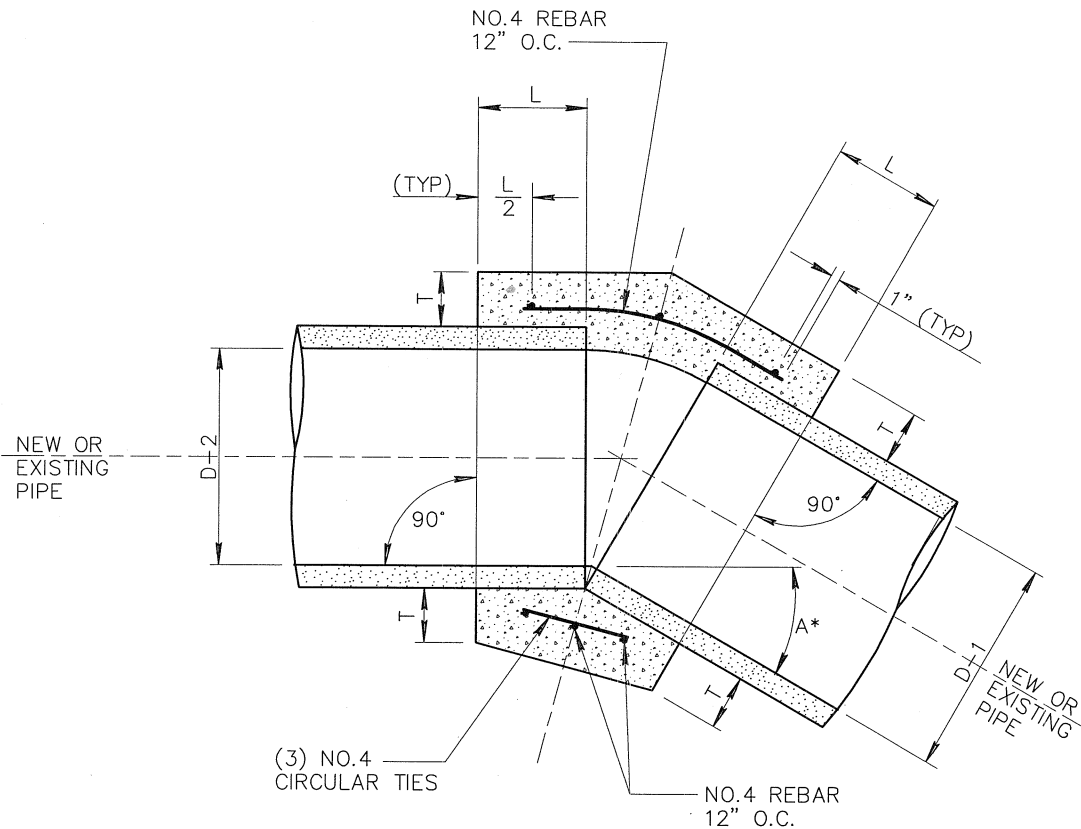
1. SIZE OF JUNCTION BOX TO BE DETERMINED BY THE ENGINEER.
2. GATE TYPE, SIZE AND NUMBER REQUIRED AS SHOWN ON PLANS OR AS SPECIFIED.
3. CONCRETE MASONRY UNITS (BLOCK) PER SECT. 510, 775 & 776

# NOTES:

1. A CONCRETE COLLAR IS REQUIRED WHERE PIPES OF DIFFERENT DIAMETERS OR MATERIALS ARE JOINED, OR WHERE THE CHANGE IN ALIGNMENT OR GRADE EXCEEDS THAT ALLOWED FOR ON ORDINARY JOINTS.
2. WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR, L AND T SHOULD BE THOSE OF THE LARGER PIPE.  $D=D-1$ , OR  $D-2$  WHICHEVER IS GREATER.
3. FOR PIPE SIZES NOT LISTED AND LESS THAN 66" USE NEXT SIZE LARGER.
4. OMIT REINFORCING ON PIPE 24" OR LESS IN DIAMETER.
5. WHERE REINFORCING IS REQUIRED, THE DIAMETER OF THE CIRCULAR TIES SHALL BE....  
OUTSIDE DIAMETER OF PIPE+T.
6. FIELD CLOSURES OF PIPE OF THE SAME DIAMETER AND WITHOUT CHANGE IN GRADE OR ALIGNMENT SHALL BE MADE WITH A CONCRETE COLLAR.
7. CONCRETE SHALL BE CLASS B PER SECT. 725.

A\*=ANGLE OF DEFLECTION

TABLE		
D	L	T
12"	1.0'	4"
18"	1.0'	5"
24"	1.0'	6"
36"	1.5'	8"
48"	1.5'	10"
57"	1.5'	10"
60"	1.75'	11"
66"	1.75'	11"



DETAIL NO.

505



STANDARD DETAIL  
ENGLISH

CONCRETE PIPE COLLAR

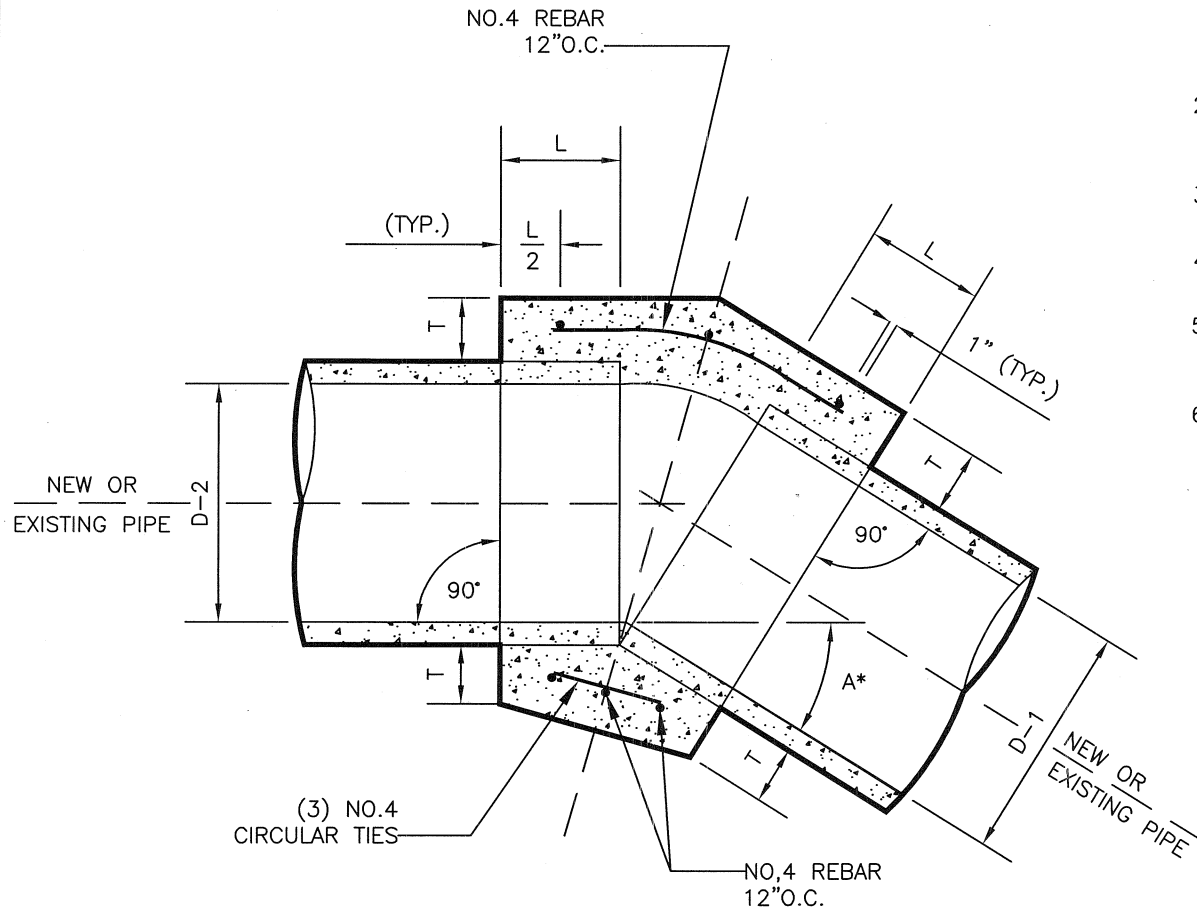
REVISED

DETAIL NO.

505

# NOTES:

1. A CONCRETE COLLAR IS REQUIRED WHERE PIPES OF DIFFERENT DIAMETERS OR MATERIALS ARE JOINED, OR WHERE THE CHANGE IN ALIGNMENT OR GRADE EXCEEDS THAT ALLOWED FOR, ON ORDINARY JOINTS.
2. WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR, L AND T SHOULD BE THOSE OF THE LARGER PIPE, D-D-1, OR D-2 WHICHEVER IS GREATER.
3. FOR PIPE SIZES NOT LISTED AND LESS THAN 66' USE NEXT SIZE LARGER.
4. WHERE REINFORCING IS REQUIRED, THE DIAMETER OF THE CIRCULAR TIES SHALL BE OUTSIDE DIAMETER OF PIPE + T
5. FIELD CLOSURES OF PIPE OF THE SAME DIAMETER AND WITHOUT CHANGE IN GRADE OR ALIGNMENT SHALL BE MADE WITH A CONCRETE COLLAR.
6. CONCRETE SHALL BE CLASS B PER SECT. 725.



\* = ANGLE OF DEFLECTION

TABLE		
D	L	T
12"	1.0'	4"
18"	1.0'	5"
24"	1.0'	6"
36"	1.5'	8"
48"	1.5'	10"
57"	1.5'	10"
60"	1.75'	11"
66"	1.75'	11"

DETAIL NO.

P1505



**City of Phoenix**  
**STANDARD DETAIL**

CONCRETE PIPE COLLAR

APPROVED

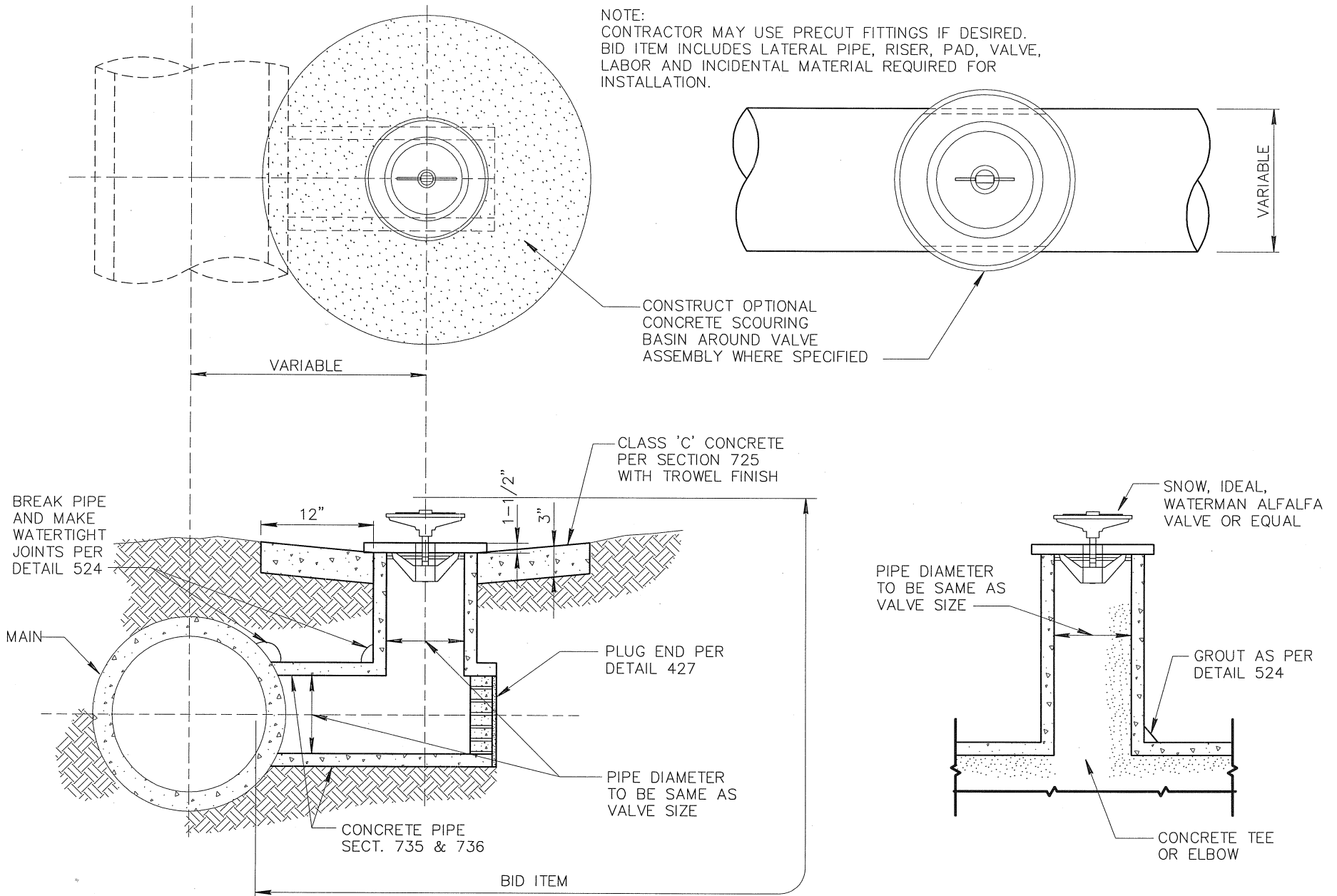
*Mario Saldamando*  
CITY ENGINEER

07-19-04  
DATE

DETAIL NO.

P1505

NOTE:  
CONTRACTOR MAY USE PRECUT FITTINGS IF DESIRED.  
BID ITEM INCLUDES LATERAL PIPE, RISER, PAD, VALVE,  
LABOR AND INCIDENTAL MATERIAL REQUIRED FOR  
INSTALLATION.



DETAIL NO.  
**506**



**STANDARD DETAIL  
ENGLISH**

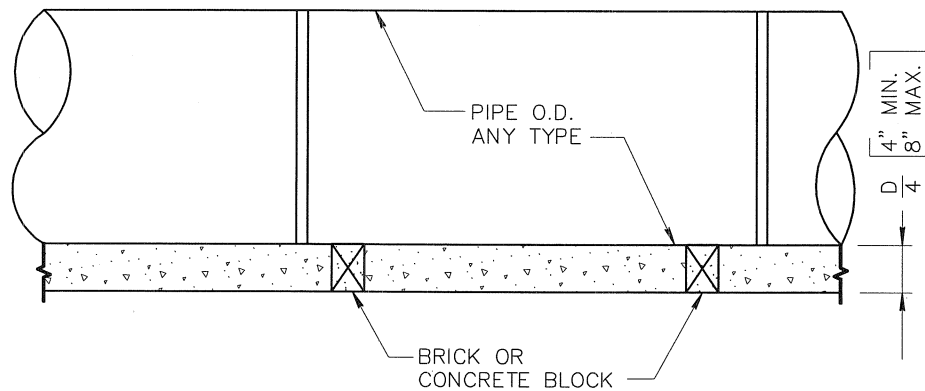
**IRRIGATION VALVE INSTALLATION**

REVISED

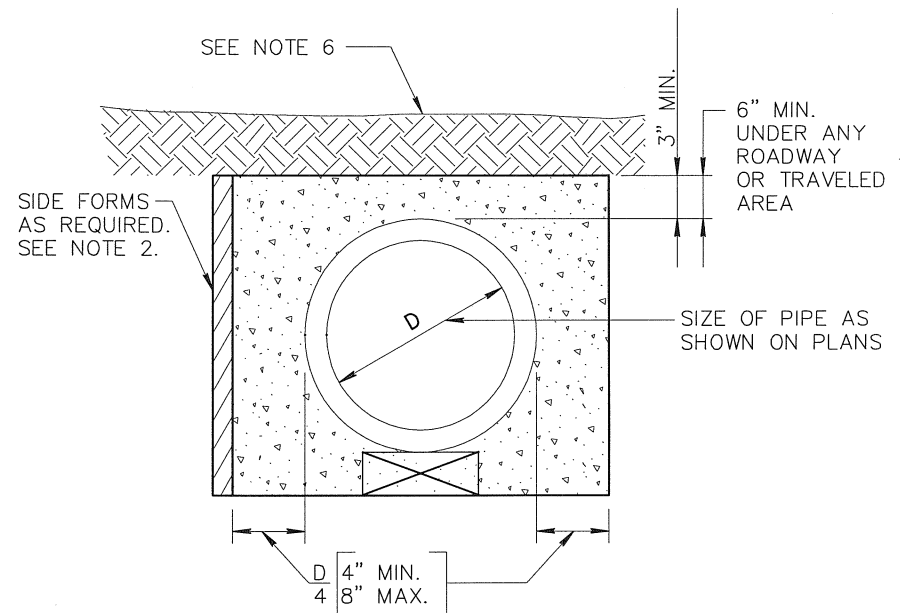
DETAIL NO.  
**506**

## NOTES:

1. THIS DETAIL SHALL BE REQUIRED WHEN NEW OR EXISTING PIPE INSTALLATIONS WILL BE SUBJECT TO DAMAGE ANYTIME IN THE FUTURE DUE TO LACK OF PROPER COVER, AS DETERMINED BY THE ENGINEER.
2. FOR PIPE OVER 18" I.D. WOOD, METAL OR GYPSUM BOARD FORMS MUST BE USED TO FORM THE SIDES OF THE ENCASEMENT. GYPSUM BOARD FORMS MAY BE LEFT IN THE GROUND BELOW THE TOP OF THE ENCASEMENT. THIS SHALL BE OPTIONAL WITH POURING AGAINST TRENCH WALLS FOR ENCASEMENT OF 18" AND SMALLER PIPE.
3. FOR ALL SITUATIONS WHERE SIDE FORMS ARE USED, TRENCH WALLS SHALL BE OVER-EXCAVATED TO ALLOW SUFFICIENT ROOM TO OPERATE PROPER MECHANICAL COMPACTION EQUIPMENT.
4. CONCRETE WHICH SPILLS BEYOND 12" FROM THE SIDES OF THE PIPE FOR ANY REASON SHALL BE REMOVED BACK TO THE PROPER LINE PRIOR TO BACKFILLING.
5. SEE SECTION 601 FOR TRENCH PREPARATION.
6. CONCRETE TO BE CLASS 'A' PER SECT. 725.
7. COVER TO BE APPROVED BY ENGINEER.



LONGITUDINAL SECTION



END SECTION

DETAIL NO.

507



MARICOPA  
ASSOCIATION of  
GOVERNMENTS

STANDARD DETAIL  
ENGLISH

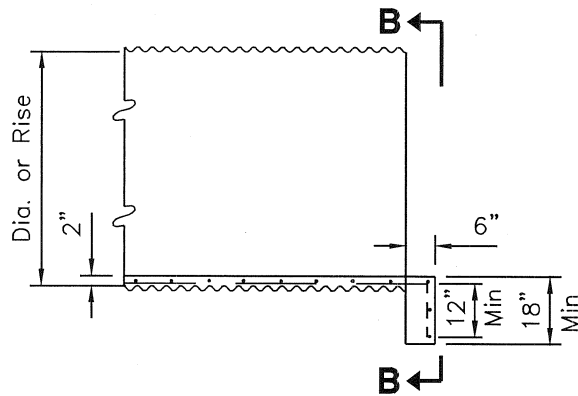
ENCASED CONCRETE PIPE  
(FOR SHALLOW INSTALLATION)

REVISED

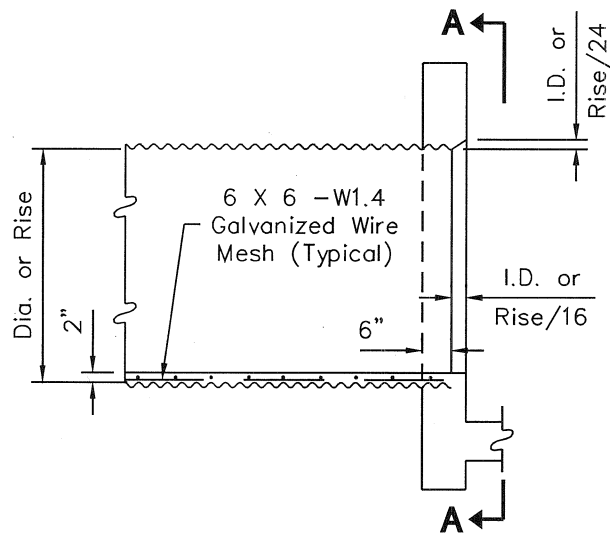
DETAIL NO.

507

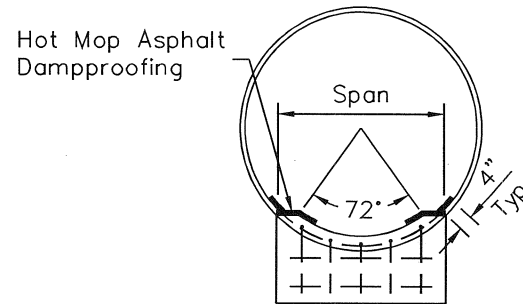




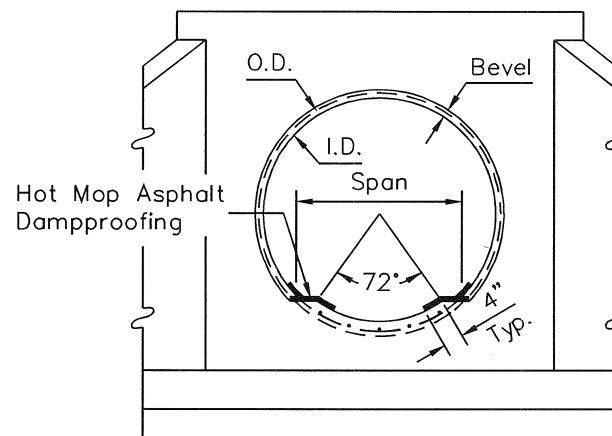
**NO HEADWALL**



**WITH HEADWALL**



**ELEVATION B-B**



**ELEVATION A-A**

**GENERAL NOTES**

1. For lateral dimensions of invert paving, use 72° control for CMP and span for CMPA.
2. Paving shall be scored at 18" min. (transverse) along pipe length.
3. Use bevel on inlet headwall only.
4. Wire mesh shall be tack welded to corrugation crests at 18" intervals. Laps shall be 6" min.
5. Paving shall not be placed until backfilling is completed.
6. Concrete shall be Class "B".

DETAIL NO.  
**2554**

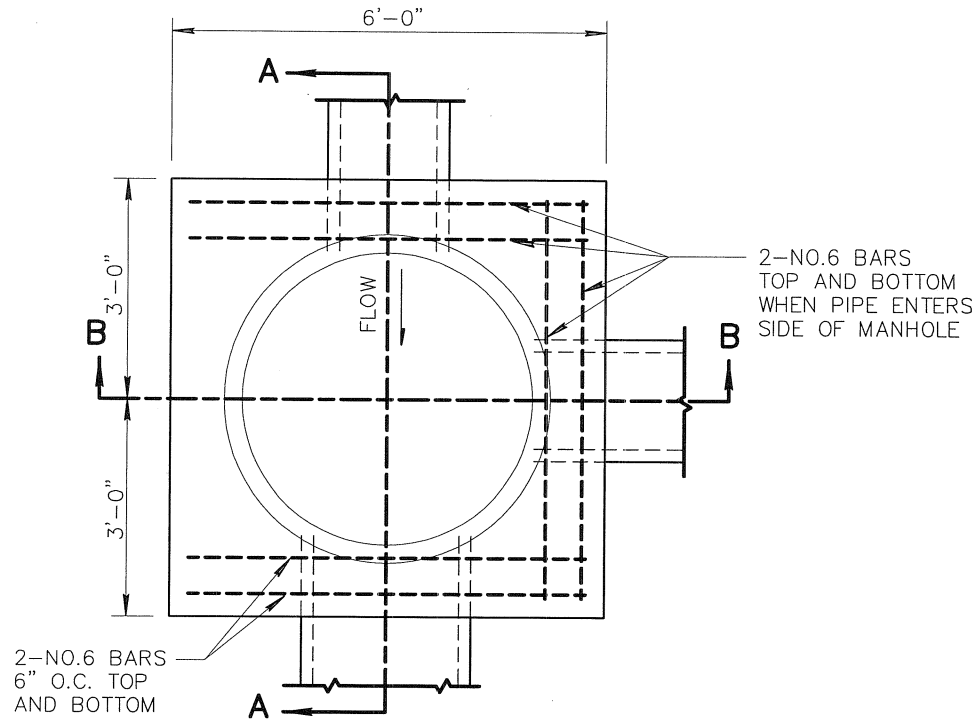
**City of Scottsdale  
Standard Details**

APPROVED BY:  
**Scottsdale Standards &  
Specifications Committee**

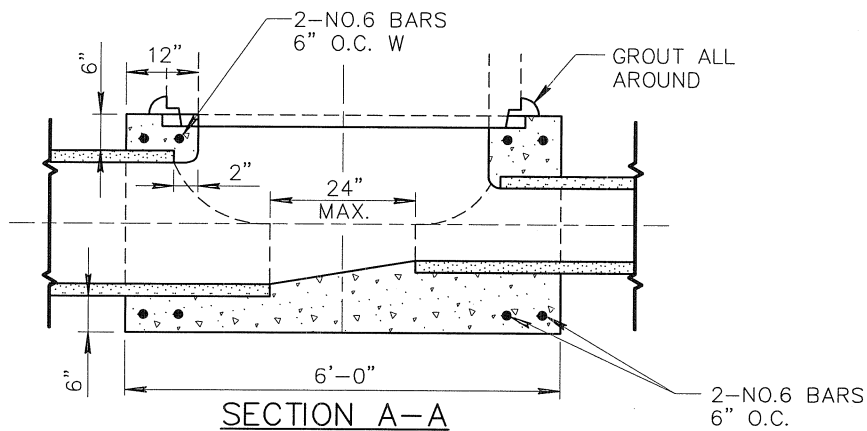
**CONCRETE INVERT PAVING FOR  
CORRUGATED METAL PIPE AND PIPE ARCH**

DETAIL NO.  
**2554**





PLAN

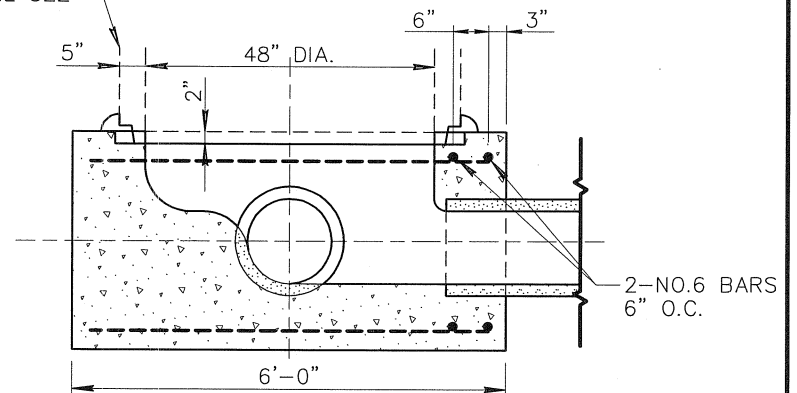


SECTION A-A

### NOTES

1. ALL CONCRETE TO BE CLASS 'A' PER SECT. 725, 505.
2. MATCH SPRING LINES OF PIPE ENTERING MANHOLE UNLESS OTHERWISE NOTED.
3. CUT PIPES TO ALLOW SETTING OF 4' DIA. CYLINDRICAL FORM FROM 6" ABOVE MAIN LINE PIPE TO SPRING LINE. CUT PIPE 2" LARGER THAN FORM TO ALLOW 2" CONCRETE OVER ENDS OF ALL CUT PIPE.
4. INVERT AND BASE OF MANHOLE TO BE POURED AND INVERT TO BE SHAPED BY HAND TO MAKE SMOOTH TRANSITION. FINISH WITH RUBBER FLOAT.
5. CENTER MANHOLE ON PIPE JOINT WHERE PIPE CHANGES SIZES, LEAVING A GAP OF 12" MINIMUM, 24" MAXIMUM.

MANHOLE SHAFT  
PER DETAIL 522



SECTION B-B

DETAIL NO.  
**520**

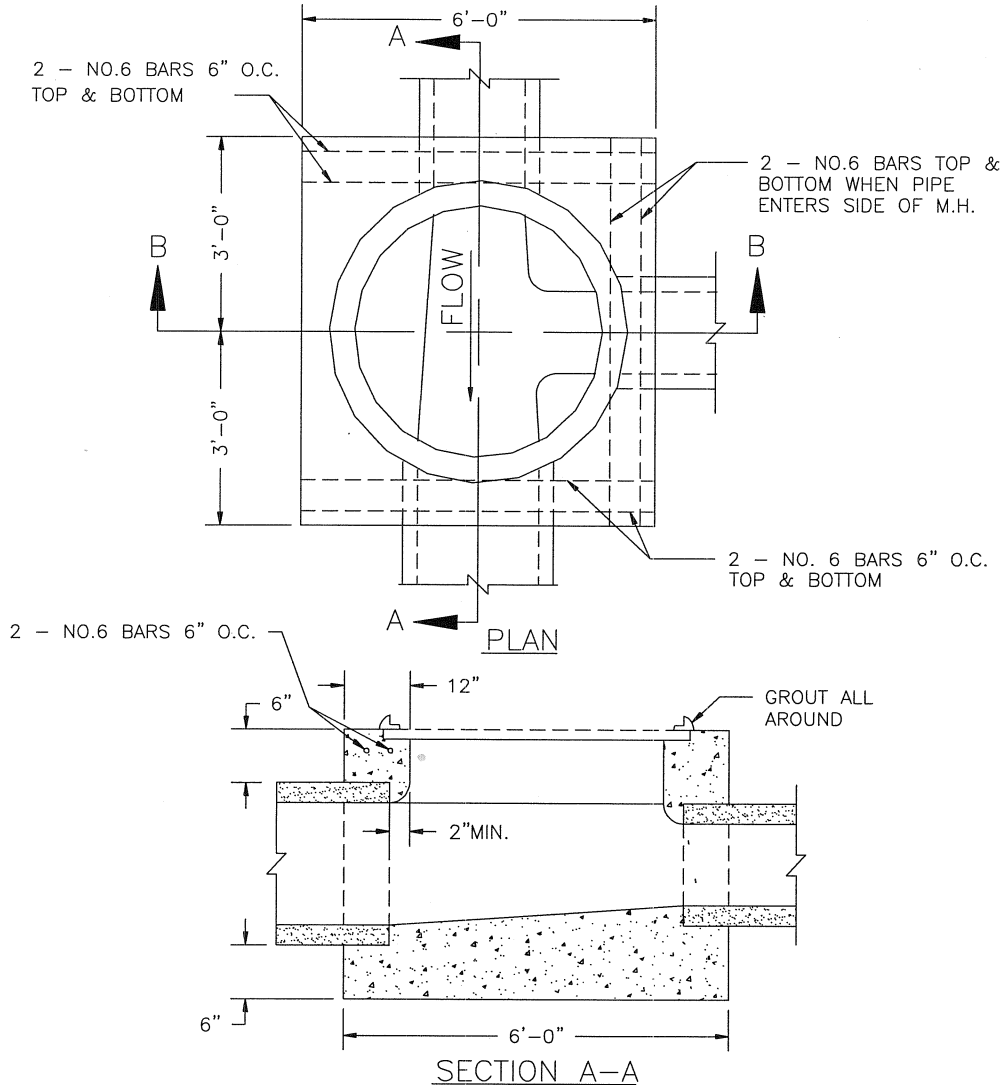


**STANDARD DETAIL  
ENGLISH**

**STORM DRAIN MANHOLE BASE  
(48" AND SMALLER)**

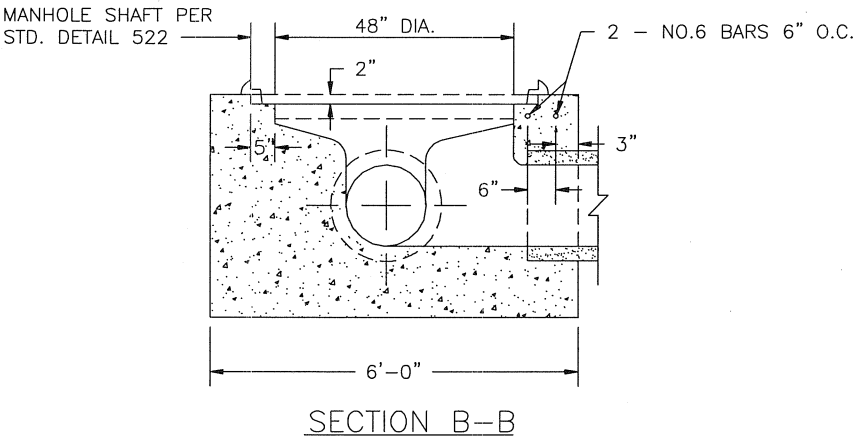
REVISED

DETAIL NO.  
**520**



NOTES

1. ALL CONCRETE TO BE CLASS "A" PER SECTION 725.
2. MATCH SPRING LINES OF PIPES ENTERING M.H. UNLESS OTHERWISE NOTED.
3. CUT PIPED TO ALLOW SETTING OF 4' DIA. CYLINDRICAL FORM FROM 6" ABOVE MAIN LINE PIPE TO SPRING LINE. CUT PIPE 2" LARGER THAN FORM TO ALLOW 2" CONC. OVER ENDS OF ALL CUT PIPE.
4. INVERT AND BASE OF M.H. TO BE POURED AND INVERT TO BE SHAPED BY HAND TO MAKE SMOOTH TRANSITION FINISH WITH RUBBER FLOAT.
5. CENTER M.H. ON PIPE JOINT WHERE PIPE CHANGES SIZES.
6. BENCH M.H. BASE TO TOP OF LARGEST PIPE.



DETAIL NO.  
P1520



City of Phoenix  
STANDARD DETAIL

STORM DRAIN MANHOLE BASE  
48" & SMALLER

APPROVED

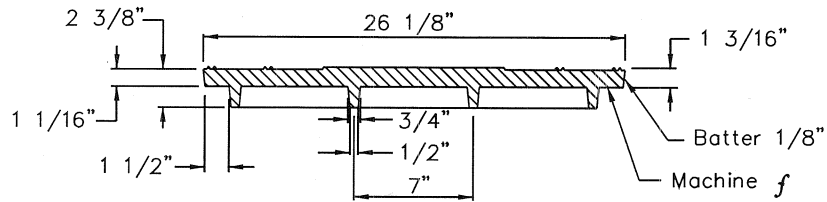
*Kenny W. Hain*  
CITY ENGINEER

07-09-92  
DATE

DETAIL NO.  
P1520

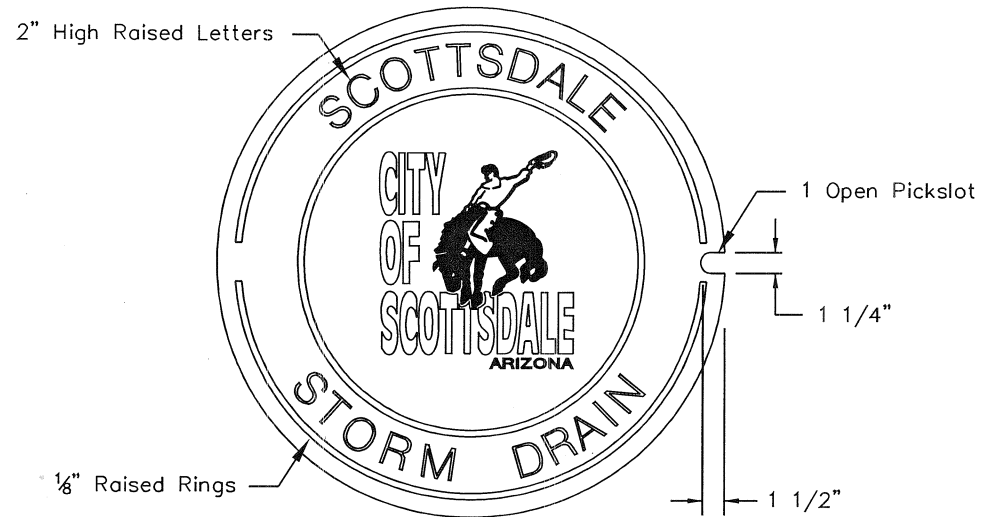


**TOP VIEW**

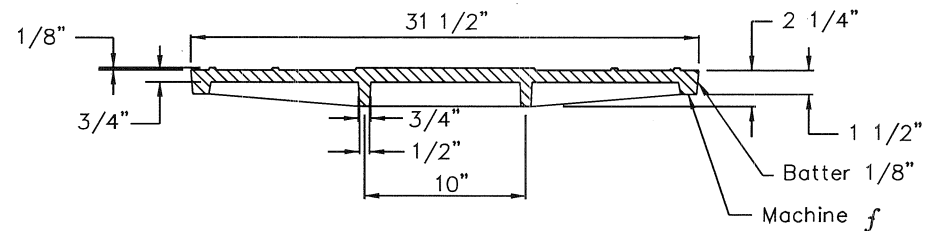


**SECTION OF COVER**

**24" MANHOLE COVER**



**TOP VIEW**



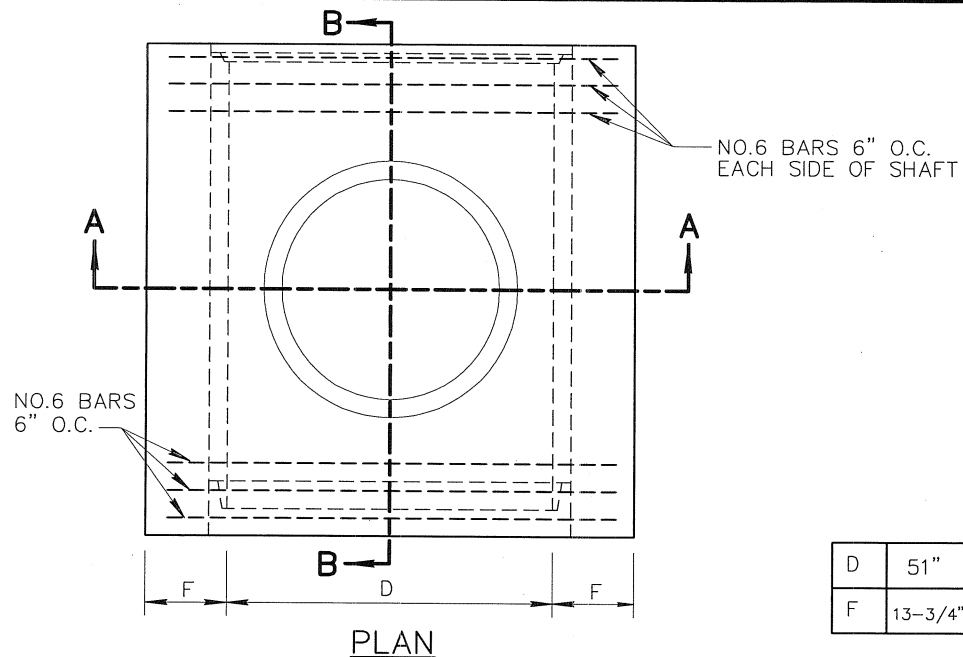
**SECTION OF COVER**

**30" MANHOLE COVER**

**NOTES**

1. Material: Cast Gray Iron ASTM A-48, Class 35B, Unpainted
2. The Total Width Of Individual Letters To Be Such That Letters And Words Are Equally Spaced And Balanced.
3. Letters To Be 2" In Height And Raised  $\frac{1}{8}$ " Above Level Of Cover. Type Of Letters To Be Submitted For Approval.
4. Weight Of Castings Shall Be No More Than 2% Less Than Weight Specified. Castings Shall Conform To M.A.G. Section 787.

DETAIL NO. <b>2520</b>	<b>City of Scottsdale Standard Details</b>	APPROVED BY: <b>Scottsdale Standards &amp; Specifications Committee</b>	<b>STORM DRAIN MANHOLE COVER</b>	DETAIL NO. <b>2520</b>
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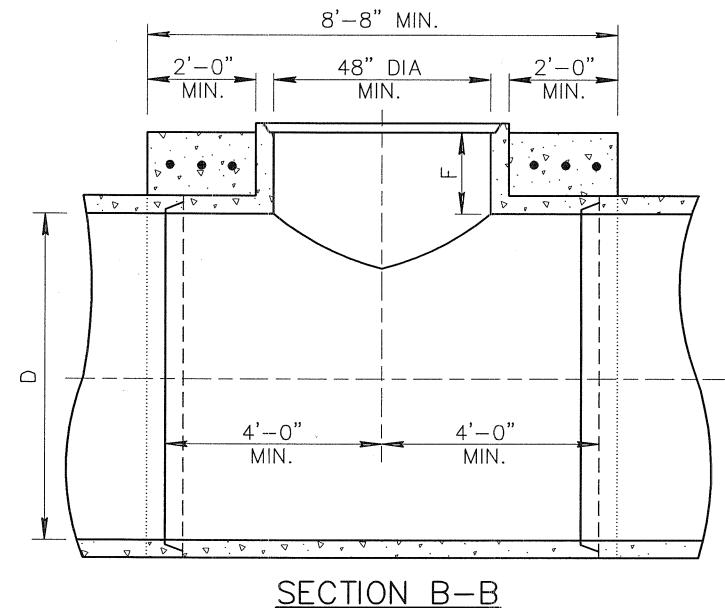
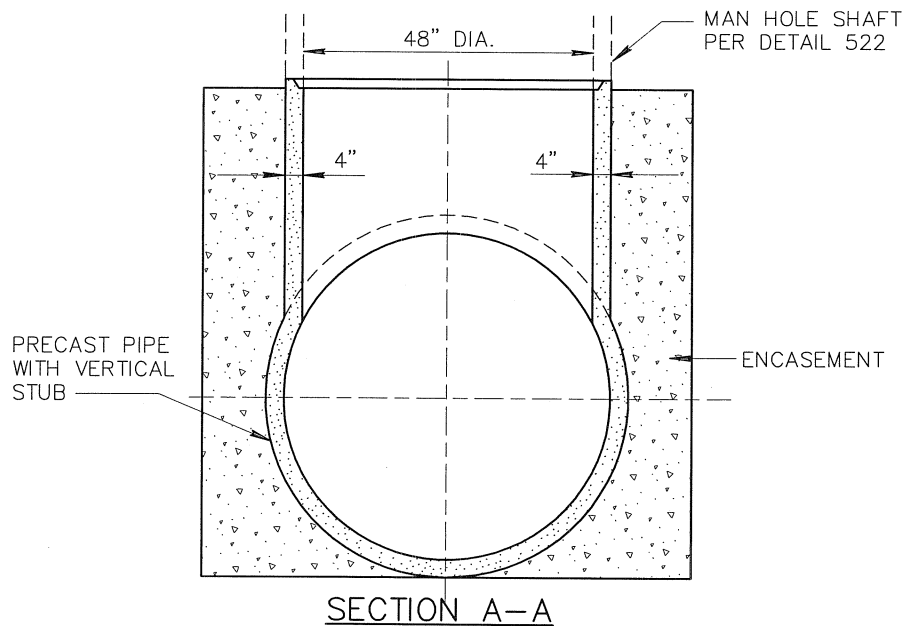


### NOTES:

1. LINE PIPE AND STUB MAY BE CAST MONOLITHICALLY OR STUB MAY BE CAST ON TO LINE PIPE SECTION PRIOR TO COMPLETE CURING.
2. ALL LINE PIPE REINFORCEMENT SHALL BE TURNED UP INTO STUB.
3. THE VERTICAL STUB TO BE A.S.T.M. C-76 CLASS II WALL 'A' AND THE HORIZONTAL PIPE TO BE EQUAL TO STRENGTH OF PIPE ENTERING MANHOLE.
4. ALL REINFORCING STEEL SHALL CLEAR FACE OF CONCRETE BY 1-1/2" UNLESS SHOWN OTHERWISE.
5. CONCRETE ENCASEMENT SHALL BE CLASS 'A' PER SECT. 725 AND 505.

TABLE OF VALUES FOR 'F' & 'D'

D	51"	54"	57"	60"	63"	66"	69"	72"	78"	84"	90"	96"
F	13-3/4"	14-1/2"	15"	15-1/2"	16-1/4"	16-3/4"	17-1/2"	18"	19-1/4"	20-1/2"	21-3/4"	23"



DETAIL NO.

521



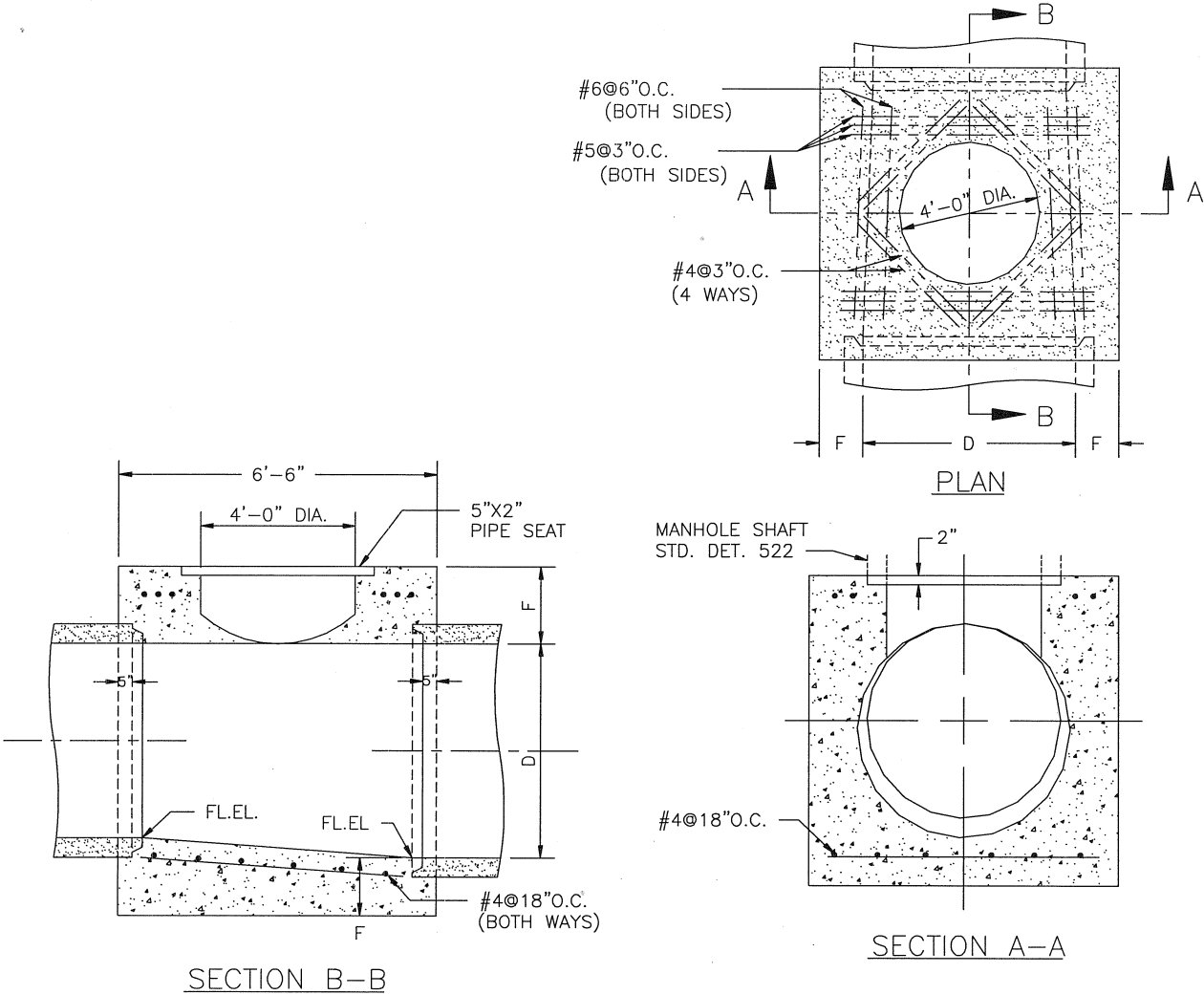
STANDARD DETAIL  
ENGLISH

## STORM DRAIN MANHOLE BASE (51' OR LARGER)

REVISED

DETAIL NO.

521

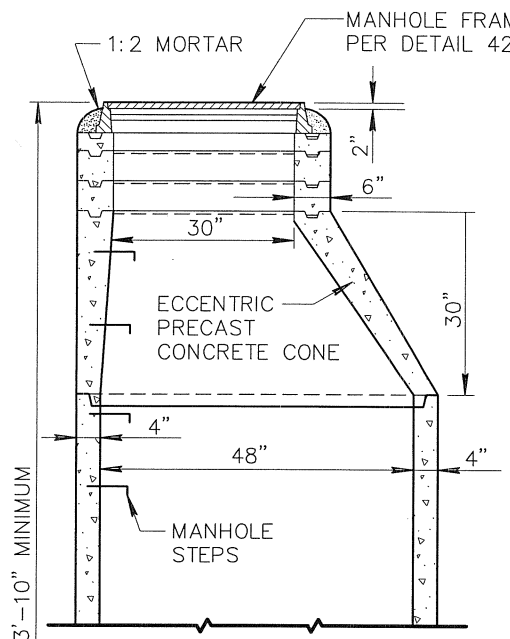


NOTES:

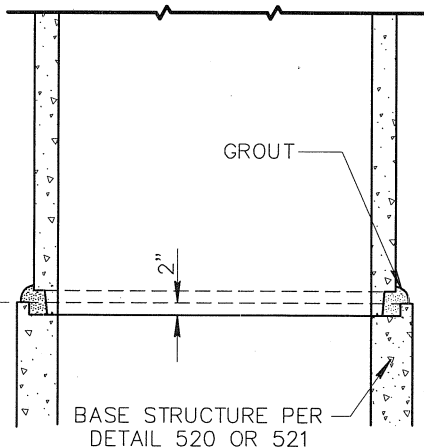
- 1. THICKNESS OF DECK SHALL VARY WHEN NECESSARY TO PROVIDE LEVEL PIPE SEAT BUT SHALL NOT BE LESS THAN 'F'.
- 2. FLOOR OF MANHOLE SHALL BE STEEL TROWELLED TO SPRING LINE.
- 3. BODY OF MANHOLE SHALL BE POURED IN ONE CONTINUOUS OPERATION, EXCEPT THAT A CONSTRUCTION JOINT WITH A LONGITUDINAL KEYWAY MAY BE PLACED AT THE SPRING LINE.
- 4. ALL REINFORCED STEEL SHALL CLEAR FACE OF CONCRETE BY 1-1/2" UNLESS SHOWN OTHERWISE.
- 5. CONCRETE SHALL BE CLASS 'A'.

"F" DIMENSION TABLE

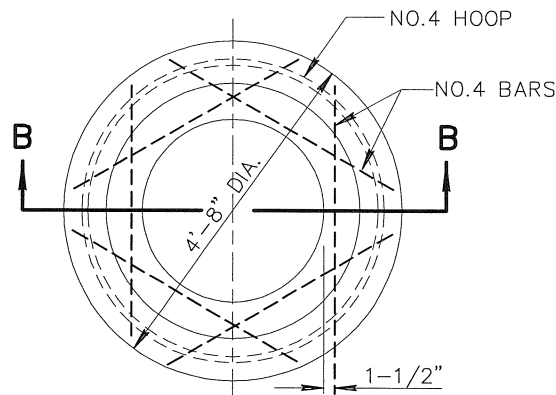
D	51"	54"	57"	60"	63"	66"
F	13-3/4"	14-1/2"	15"	15-1/2"	16-1/4"	16-3/4"
D	69"	72"	78"	84"	90"	96"
F	17-1/2"	18"	19-1/4"	20-1/2"	21-3/4"	23"



ALL JOINTS SHALL BE FILLED WITH 1:2 MORTAR AND NEATLY POINTED OR WIPED ON INSIDE OF SHAFT.



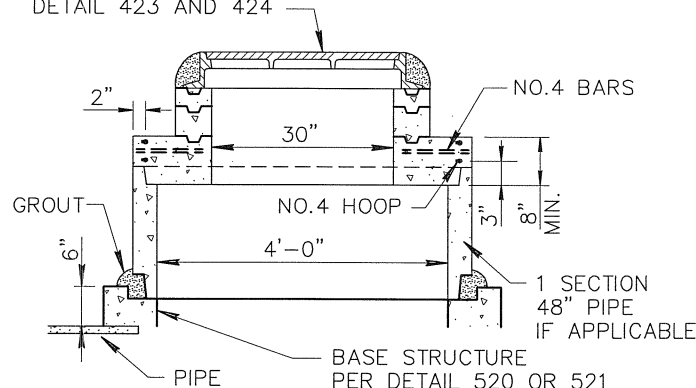
VERTICAL SECTION OF  
ECCENTRIC MANHOLE SHAFT



PLAN

USE WHERE THERE IS 3'-10"  
OR LESS COVER OVER PIPE

MANHOLE FRAME  
AND COVER PER  
DETAIL 423 AND 424

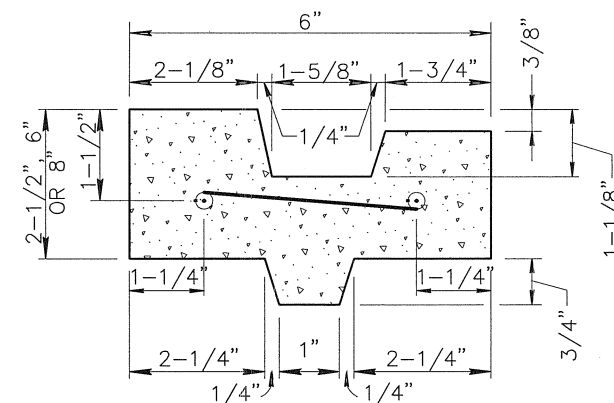


SECTION B-B

SHALLOW MANHOLE

NOTES:

1. PRECAST CONCRETE CONES AND SECTIONS TO BE A.S.T.M. C-478.
2. BRICK MAY BE USED IN LIEU OF OR IN COMBINATION WITH CONCRETE ADJUSTING RINGS.
3. PRECAST CONCRETE SECTIONS 48" DIA PIPE MAY BE FURNISHED IN STANDARD LENGTHS.
4. UNLESS OTHERWISE SHOWN ON PLANS, USE (2) 2-1/2" PRECAST CONCRETE ADJUSTING RINGS ON IMPROVED STREETS AND (4) 2-1/2" RINGS ON UNIMPROVED STREETS.
5. MANHOLE STEPS SHALL BEGIN 2'-0" BELOW FINISHED GRADE AND CONTINUE AT 12" INTERVALS TO APPROXIMATELY 2' ABOVE MANHOLE SHELF. (AS REQUIRED BY AGENCY.)
6. CONCRETE SHALL BE CLASS A PER SECTION 725 AND 505.



2-1/2" RINGS SHALL BE REINFORCED WITH TWO 1/4" ROUND STEEL HOOPS; 6" AND 8" RINGS SHALL BE REINFORCED WITH FOUR 1/4" HOOPS, TIED WITH NO. 14 A.S. & W. GAUGE WIRE 8" O.C.

REINFORCED CONCRETE  
ADJUSTING RING

DETAIL NO.

522



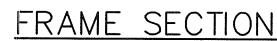
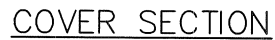
STANDARD DETAIL  
ENGLISH

STORM DRAIN MANHOLE SHAFT

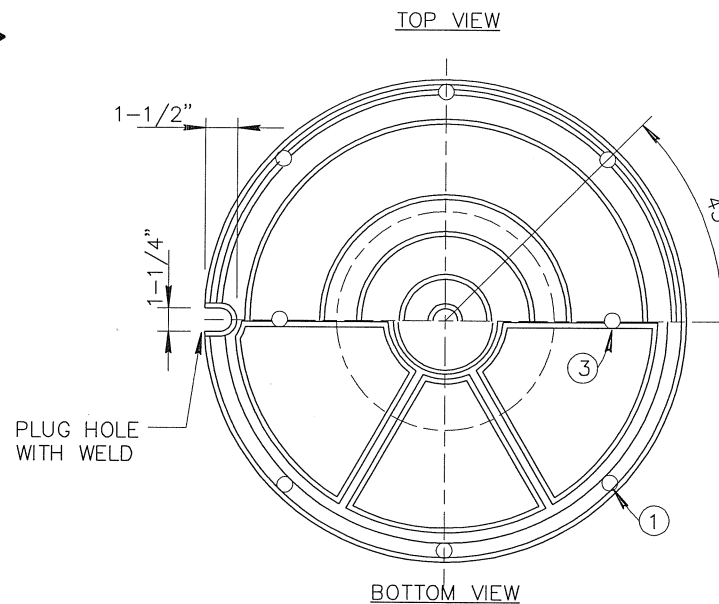
REVISED

DETAIL NO.

522



FOR A 24" M.H. OPENING, MODIFY THE STD. 24"  
M.H. FRAME & COVER, FOLLOWING THE NOTED PROCEDURES,  
ONE THRU FIVE.



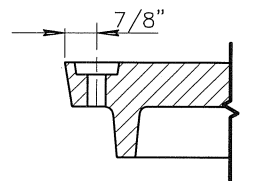
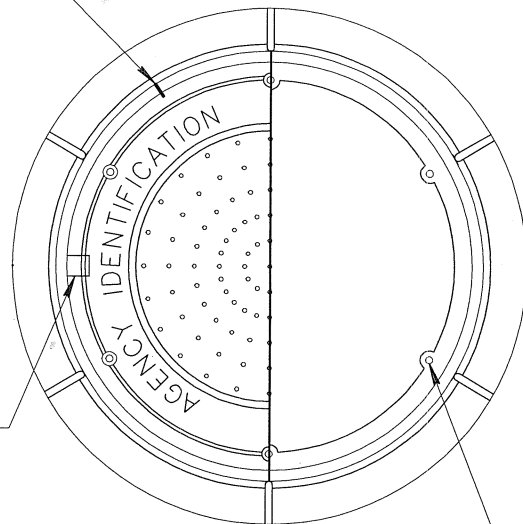
STANDARD 24" M.H.  
FRAME AND COVER

NOTES:

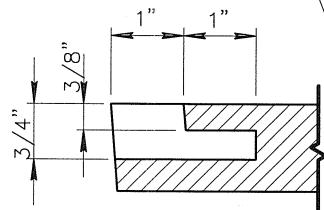
- ① DRILL (8) HOLES 17/32" IN COVER FOR 1/2" CAPSCREWS, COUNTERBORE 1/2" DEEP BY 1-1/8" DIA. TO ACCOMODATE CAPSCREW AND SOCKET WRENCH. SPACE EQUALLY.
  - ② DRILL (8) HOLES AND TAP FOR 1/2" - 13 THREAD NATIONAL COARSE BOLT.
  - ③ DRILL, TAP AND COUNTERBORE (2) HOLES FOR 1/2" CAPSCREWS TO BE USED FOR LIFTING COVER. PLUG WITH CAPSCREWS.
  - ④ COVER AND FRAME MUST BE MATCHED, DRILLED AND TAPPED IN SETS.
  - ⑤ CASTING DIMENSIONS GIVEN ABOVE ARE FROM DET. 424, 24" MANHOLE FRAME AND COVER.
- BOTH 24" AND 30" FRAMES TO BE ANCHORED AS FOLLOWS:
- ⑥ DRILL 1/2" HOLE IN FILLET. DO NOT USE ADJACENT FILLETS.
  - ⑦ 1/4" STAINLESS STEEL CABLE. SECURED WITH CABLE CLAMPS.
  - ⑧ 1/2"x9" HOOK AND EYE TURNBUCKLE.
  - ⑨ 1/2" EYE BOLT WITH 1" DIA. EYE.
  - ⑩ INSTALL THREE CABLES PER 24" COVER (FOUR CABLES FOR 30" COVERS). EYEBOLTS TO BE SET DIRECTLY BELOW FILLETS USED.
  - ⑪ TRIPLE WRAP TURNBUCKLES AND CABLE CLAMPS WITH 1" WIDE TAPE, SAFE-T-CLAD, F.O.S. 655, OR APPROVED EQUAL.

GROUND MATCH MARK  
1/4" W x 1/8" D

(2) CONCEALED  
PICKHOLES  
180 DEG. APART



BOLT HOLE DETAIL



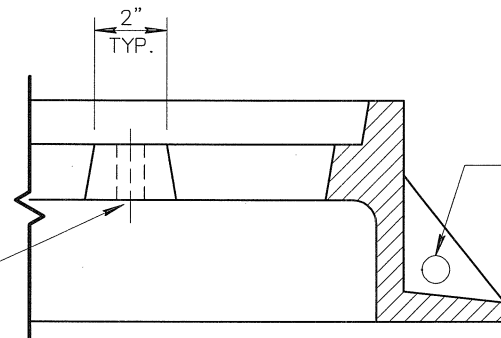
PICKHOLE DETAIL

COVER SECTION

### NOTES:

1. DRILL (6) HOLES IN 30" COVER (4 HOLES IN 24" COVER) 17/32" CORED RECESS FOR 1/2" CAPSCREWS. SPACE EQUALLY (304 S.S.)
2. DRILL (6) HOLES IN 30" FRAME (4 HOLES IN 24" FRAME) AND TAP FOR 1/2" - NATIONAL COARSE BOLT (HEX HEAD).
3. COVER AND FRAME MUST BE MATCH MARKED, DRILLED AND TAPPED IN SETS.
4. DIMENSIONS, LETTERING, WEIGHTS AND MATERIALS SHALL CONFORM TO DET. 424.
5. REFER TO DETAIL 523-1 FOR INSTALLATION PROCEDURES.

TYP. BOLT PAD



3/4" DIA. CORED  
HOLES IN GUSSET

FRAME SECTION

DETAIL NO.

523-2



MARICOPA  
ASSOCIATION of  
GOVERNMENTS

STANDARD DETAIL  
ENGLISH

PRESSURE MANHOLE

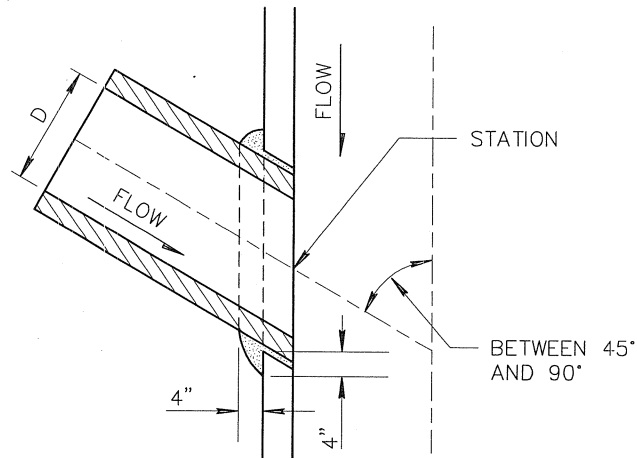
REVISED

DETAIL NO.

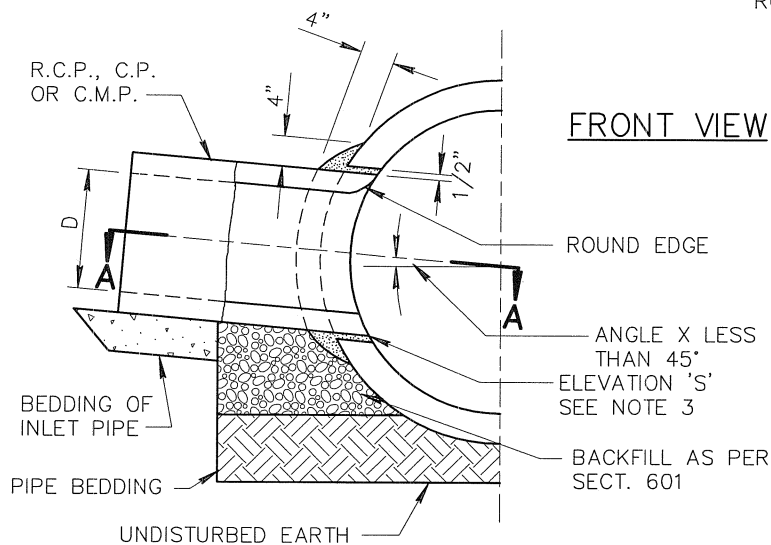
523-2



TOP VIEW

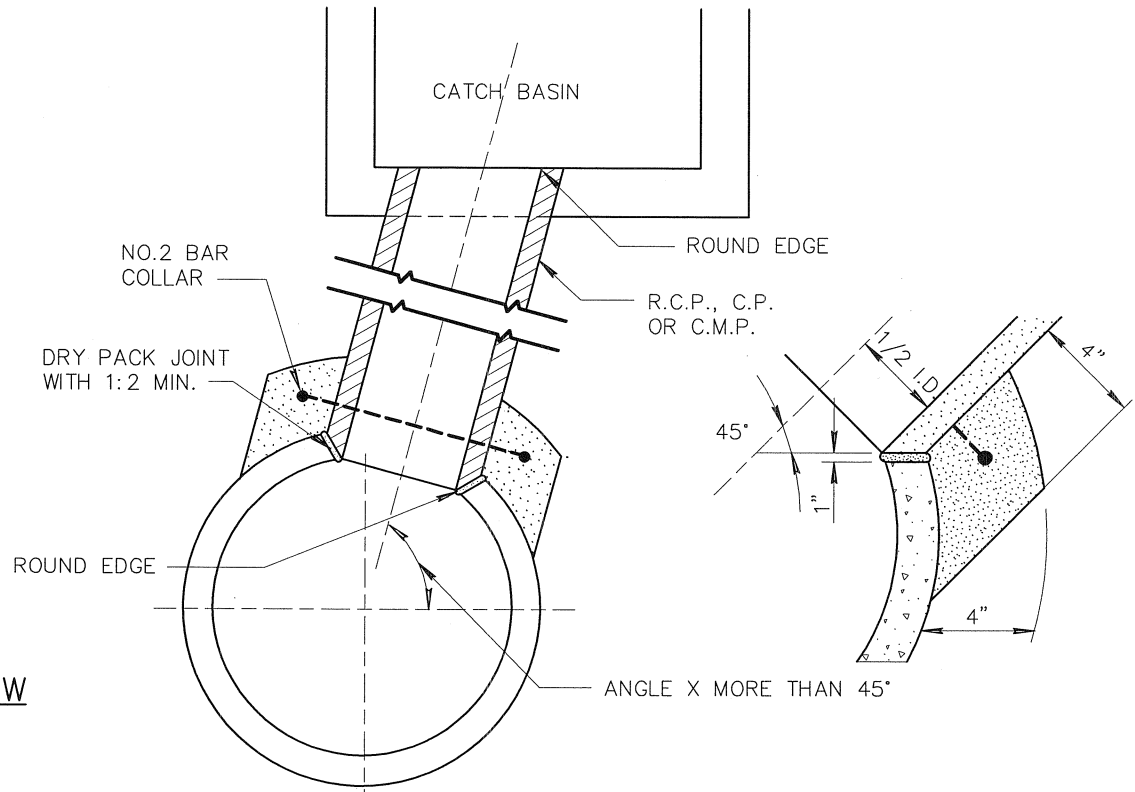


SECTION A-A



SIDE INLET  
TYPE 1

FRONT VIEW



CATCH BASIN ABOVE STORM DRAIN  
TYPE 2

NOTES:

1. D SHALL BE 24" OR LESS. FOR LARGER VALUE OF D USE MANHOLE OR JUNCTION STRUCTURE.
2. IN NO CASE SHALL THE OUTSIDE DIAMETER OF THE INLET EXCEED ONE HALF THE INSIDE DIAMETER OF THE MAIN STORM DRAIN.
3. CENTERLINE OF INLET SHALL BE ON RADIUS OF MAIN STORM DRAIN EXCEPT WHEN ELEVATION 'S' IS SHOWN ON PLANS.
4. THE MINIMUM OPENING INTO THE STORM DRAIN SHALL BE THE OUTSIDE DIAMETER OF THE CONNECTING PIPE PLUS 1".
5. IF ANGLE X FROM HORIZONTAL IS 45° OR LESS USE TYPE 1.  
IF ANGLE X IS 45° OR OVER USE TYPE 2.

DETAIL NO.

524



MARICOPA  
ASSOCIATION of  
GOVERNMENTS

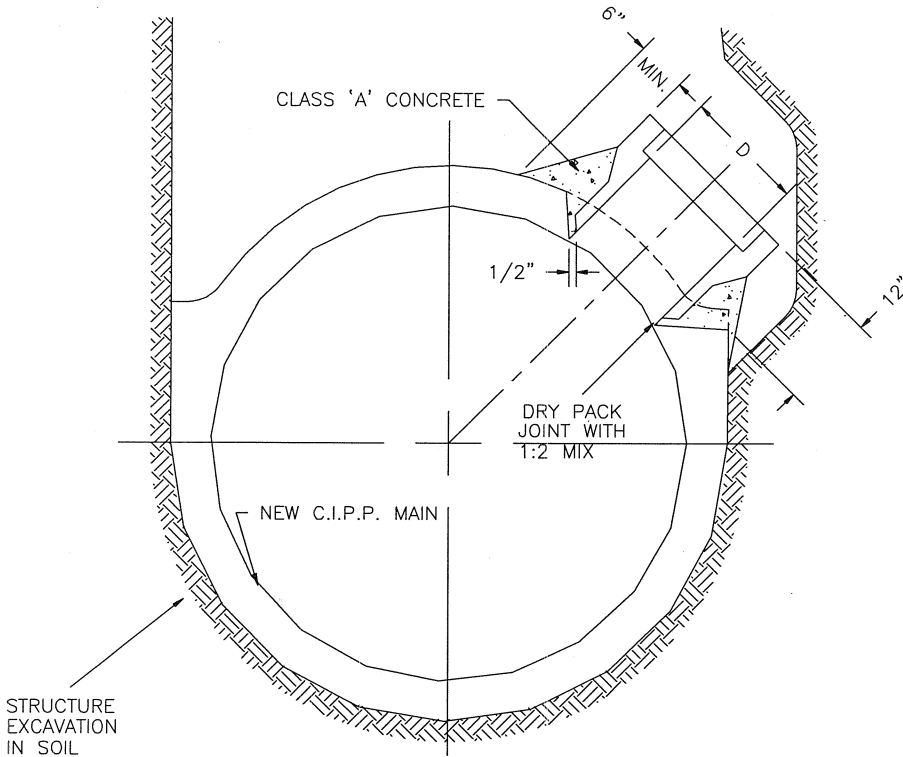
STANDARD DETAIL  
ENGLISH

STORM DRAIN LATERAL  
PIPE CONNECTIONS

REVISED

DETAIL NO.

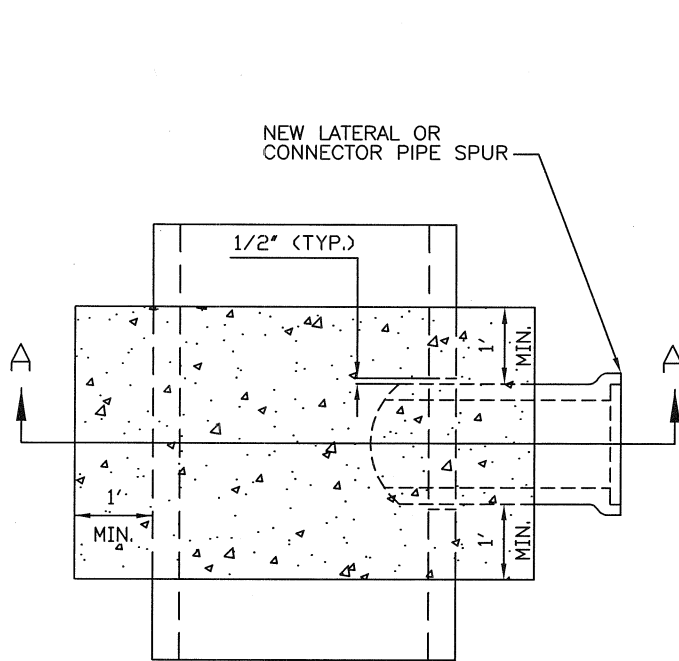
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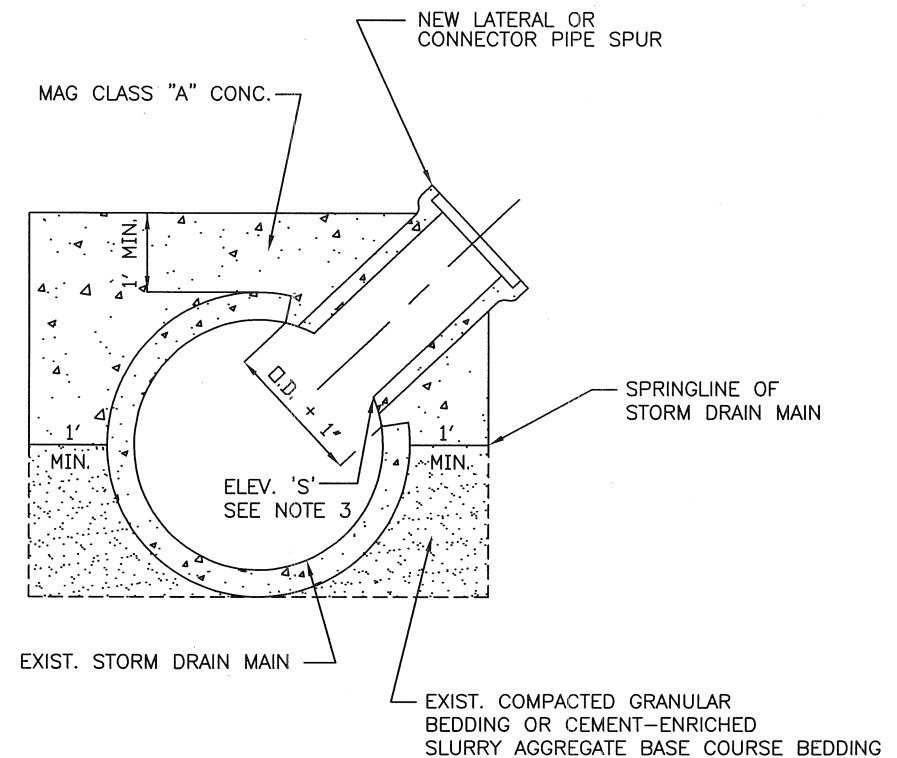
NOTES:

- 1. "D" SHALL BE 24" OR LESS.
- 2. PRECAST TEE SHALL BE INSTALLED WHERE THE MAINLINE PIPE IS SMALLER THAN THE MINIMUM OR THE CONNECTING PIPE IS LARGER THAN 24".
- 3. THE BELL END OF THE PRECAST CONCRETE PIPE SHALL BE INSTALLED AS SHOWN WHILE CONCRETE OF MAINLINE PIPE IS WET.
- 4. TRENCH WALL TO BE EXCAVATED AS NECESSARY PRIOR TO POURING MAINLINE PIPE TO ACCOMMODATE LATERAL STUB.
- 5. AXIS OF LATERAL STUB SHALL BE AS PER PLAN AND CROSS-SECTION.
- 6. THE LATERAL STUB SHALL SATISFY STRENGTH REQUIREMENTS AS SPECIFIED FOR THE LATERAL PIPE.
- 7. LATERALS FOR FUTURE CONNECTION SHALL BE MARKED. (SEE MAG DETAIL 427)

CONNECTING PIPE SIZE	MINIMUM SIZE MAIN
15"	24"
18"	36"
21"	42"
24"	48"



PLAN VIEW



SECTION A-A

NOTES:

1. THIS DETAIL SHALL BE USED FOR CONNECTING NEW SMALL STORM DRAIN LATERALS OR CATCH BASIN CONNECTOR PIPES TO EXISTING STORM DRAIN MAINS.
2. THIS DETAIL SHALL ONLY BE USED WHEN OUTSIDE DIAMETER OF NEW LATERAL OR CONNECTOR PIPE SPUR IS LESS THAN OR EQUAL TO THE INSIDE DIAMETER OF THE EXISTING STORM DRAIN MAIN.
3. THE CONNECTOR PIPE SPUR LINE SHALL BE CONSTRUCTED RADIAL TO THE MAIN, UNLESS OTHERWISE SHOWN BY ELEVATION 'S' AS SHOWN ON PLANS.
4. THE LENGTH OF THE SPUR STUB SHALL BE A MINIMUM OF 18" TO ALLOW FULL, CLEAN PIPE CONNECTION TO THE SPUR JOINT.
5. CONCRETE SHALL BE MAG CLASS "A".

DETAIL NO.

P1577



**City of Phoenix**  
**STANDARD DETAIL**

SMALL STORM DRAIN LATERAL  
CONNECTION OF CATCH BASIN CONNECTOR  
PIPE TO EXISTING STORM DRAIN MAIN

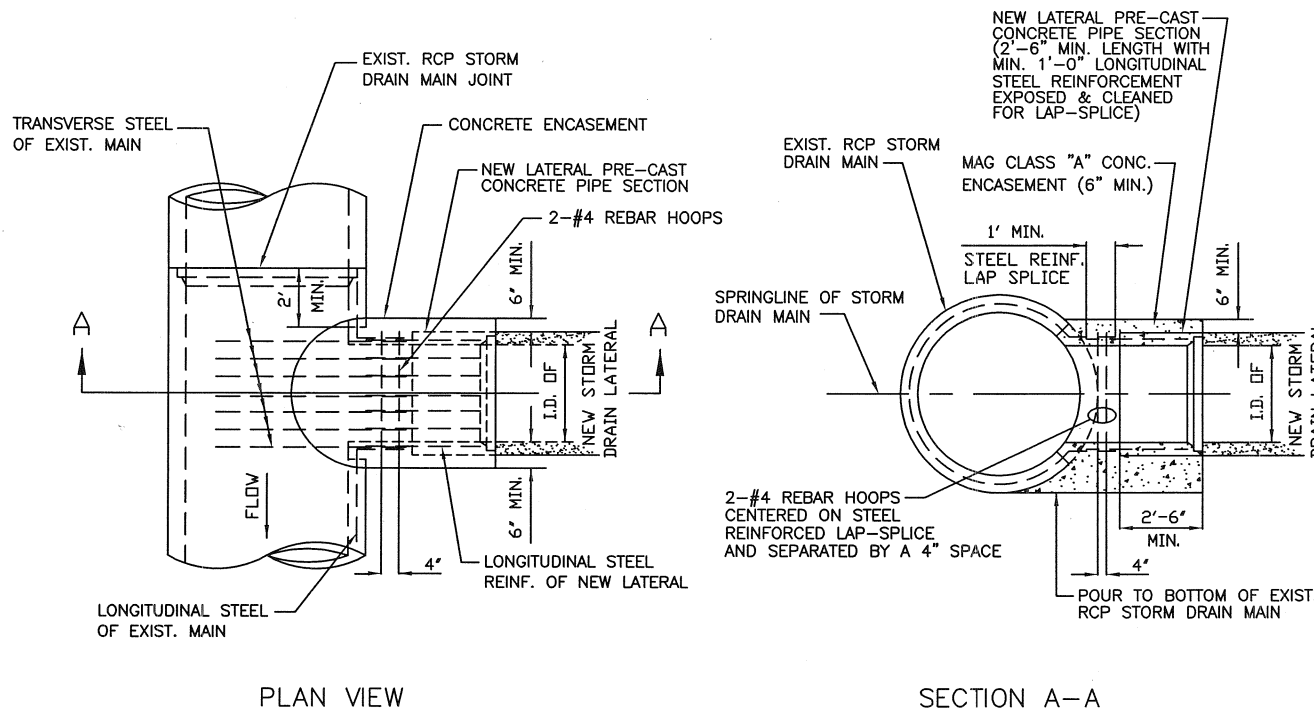
APPROVED

*Mario Saldamando*  
CITY ENGINEER

07-19-04  
DATE

DETAIL NO.

P1577



**NOTES:**

1. THIS DETAIL SHALL BE USED FOR CONNECTING NEW LARGE RCP STORM DRAIN LATERALS OR CATCH BASIN CONNECTOR PIPES TO EXISTING RCP STORM DRAIN MAINS.
2. THIS DETAIL SHALL ONLY BE USED WHEN OUTSIDE DIAMETER OF NEW RCP STORM DRAIN LATERAL OR CONNECTOR PIPE IS LESS THAN THE INSIDE DIAMETER OF THE EXISTING STORM DRAIN MAIN, AND NO OTHER TYPE CONNECTION (SUCH AS A MANHOLE OR SPECIAL JUNCTION STRUCTURE) IS FEASIBLE OR DESIRABLE.
3. THE EXISTING STORM DRAIN MAIN SHALL BE EXPOSED AT THE PROPOSED LOCATION OF NEW CONNECTION. IF NECESSARY, THE LOCATION MAY BE MOVED DOWN STREAM SUCH THAT THE OUTSIDE OF THE NEW OPENING WILL BE A MINIMUM OF 2' FROM THE NEAREST JOINT IN THE EXISTING PIPE MAIN.
4. A CIRCULAR OPENING IN THE EXISTING MAINLINE PIPE SHALL BE CUT TO MATCH THE INSIDE DIAMETER OF THE NEW LATERAL, NORMAL TO THE PIPE SURFACE, WITHOUT DAMAGING STEEL. THE EXPOSED STEEL IN THE CIRCULAR OPENING OF THE EXISTING MAIN SHALL BE CUT TO PROVIDE RELATIVELY EQUAL-LENGTH REINFORCING STUBS AND BENT TO A HORIZONTAL POSITION IN PREPARATION FOR CONNECTION.
5. THE LONGITUDINAL STEEL ON THE END OF THE NEW STORM DRAIN LATERAL STUB SHALL BE PREPARED TO EXPOSE A MINIMUM 1'-0" OF CLEAN STEEL REINFORCEMENT FOR LAP-SPLICING AROUND THE PERIPHERY OF THE NEW STUB. THE EXPOSED STEEL OF THE EXISTING MAIN SHALL BE LAP-SPLICED A MINIMUM OF 1'-0" AND REINFORCE-TIED WITH 2-#4 REBAR HOOPS.
6. THE NEW STUB AND JOINT SHALL THEN BE ENCASED WITH A MINIMUM OF 6" OF MAG CLASS 'A' CONCRETE. THE ENCASEMENT SHALL EXTEND THE ENTIRE LENGTH OF THE STUB (MIN. 2'-6"). THE SPLICE-JOINT AREA BETWEEN THE PIPES SHALL BE NEATLY FORMED INSIDE TO CREATE A CLEAN, FORMED JOINT.

DETAIL NO.

P1578



**City of Phoenix**  
**STANDARD DETAIL**

**LARGE RCP STORM DRAIN LATERAL  
OR CATCH BASIN CONNECTOR PIPE  
TO EXISTING RCP STORM DRAIN MAIN**

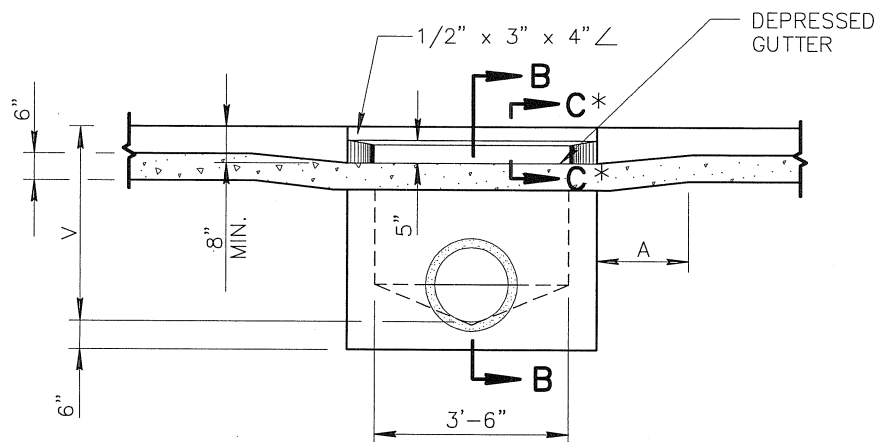
APPROVED

*Mano Saldamando*  
CITY ENGINEER

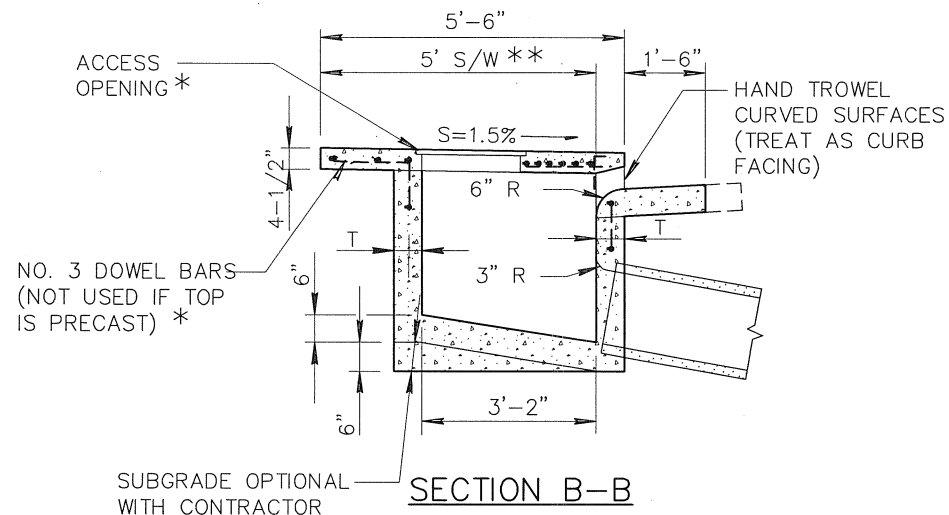
07-19-04  
DATE

DETAIL NO.

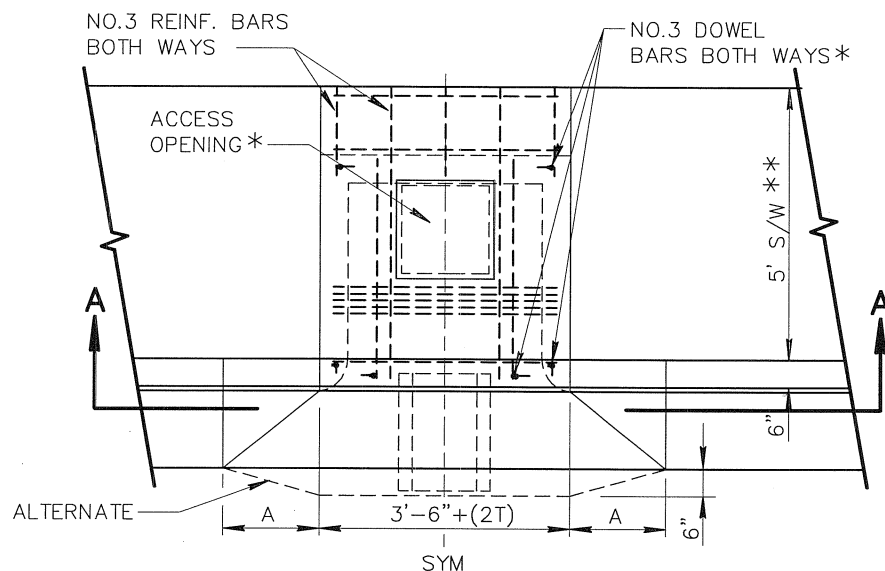
P1578



SECTION A-A



SECTION B-B



PLAN VIEW

### NOTES:

1. THE ENTIRE CATCH BASIN COVER MAY BE POURED IN PLACE OR PRECAST.
2. CONNECTION PIPES MAY BE PLACED IN ANY POSITION AROUND THE WALLS PROVIDED THE POSITION IS CONSISTENT WITH THE PLAN.
3. OUTLET PIPE SHALL BE TRIMMED TO FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
4. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
5. ALL STRUCTURAL STEEL TO BE PAINTED ONE SHOP COAT OF NO. 1 D PAINT AND TWO FIELD COATS OF NO. 10 PAINT AS PER SECT. 790.
6. CONCRETE SHALL BE CLASS A PER SECTION 725.

CURB	A
4"	3'-3"
6"	1'-9"
7"	1'-0"

### DIMENSIONS

T=6" IF V=4' OR LESS  
 T=8" IF V IS BETWEEN 4' AND 8'  
 T=10" IF V IS 8' OR MORE (IF V EXCEEDS 10' SPECIAL DESIGN IS REQUIRED)  
 V=3'-6" UNLESS OTHERWISE SPECIFIED.

- \* SEE DETAILS 536-1 AND 536-2 FOR DETAILS AND SECTIONS COMMON TO ALL CURB OPENING CATCH BASINS.  
 \*\* 4' LOCATIONS WHERE 4' S/W IS REQUIRED.

DETAIL NO.

530



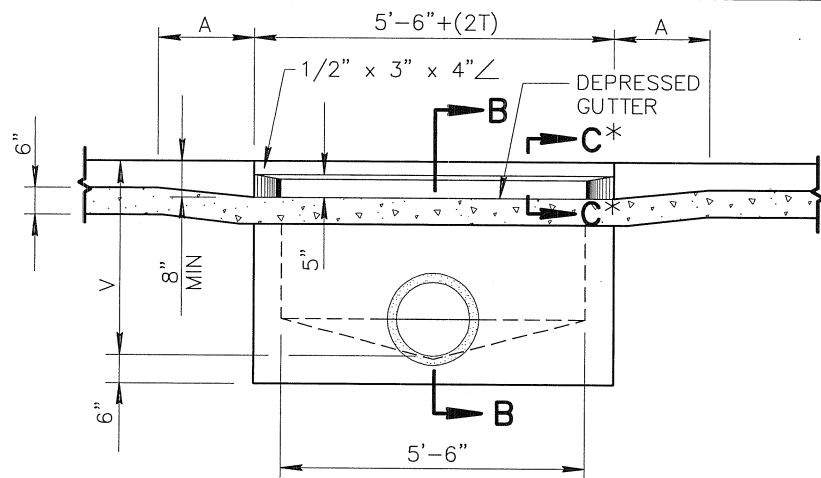
STANDARD DETAIL  
 ENGLISH

3'-6" CURB OPENING  
 CATCH BASIN - TYPE 'A'

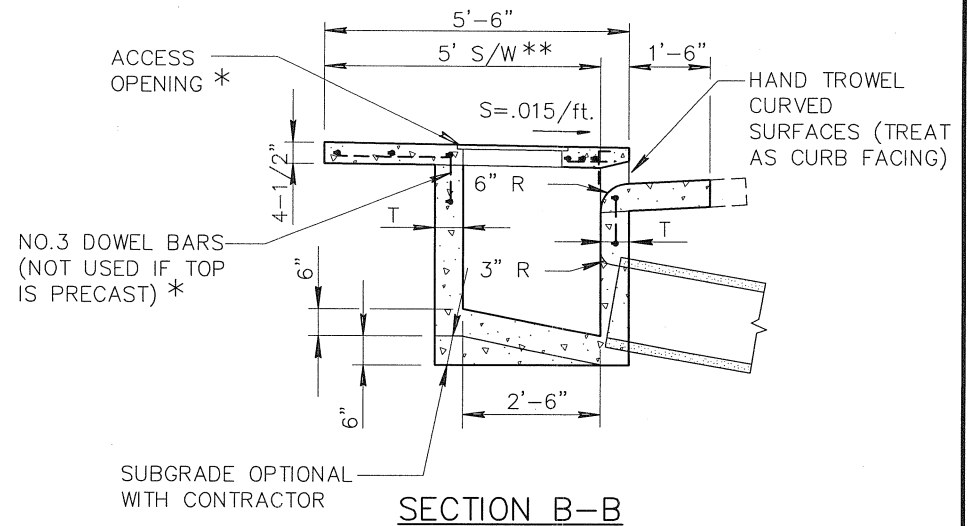
REVISED

DETAIL NO.

530



SECTION A-A



NOTES:

1. THE ENTIRE CATCH BASIN COVER MAY BE POURED IN PLACE OR PRECAST.
2. CONNECTION PIPES MAY BE PLACED IN ANY POSITION AROUND THE WALLS PROVIDED THE POSITION IS CONSISTENT WITH THE PLAN.
3. OUTLET PIPE SHALL BE TRIMMED TO FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
4. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
5. ALL STRUCTURAL STEEL TO BE PAINTED ONE SHOP COAT OF NO. 1 D PAINT AND TWO FIELD COATS OF NO. 10 PAINT AS PER SECT. 790.
6. CONCRETE SHALL BE CLASS A PER SECTION 725.

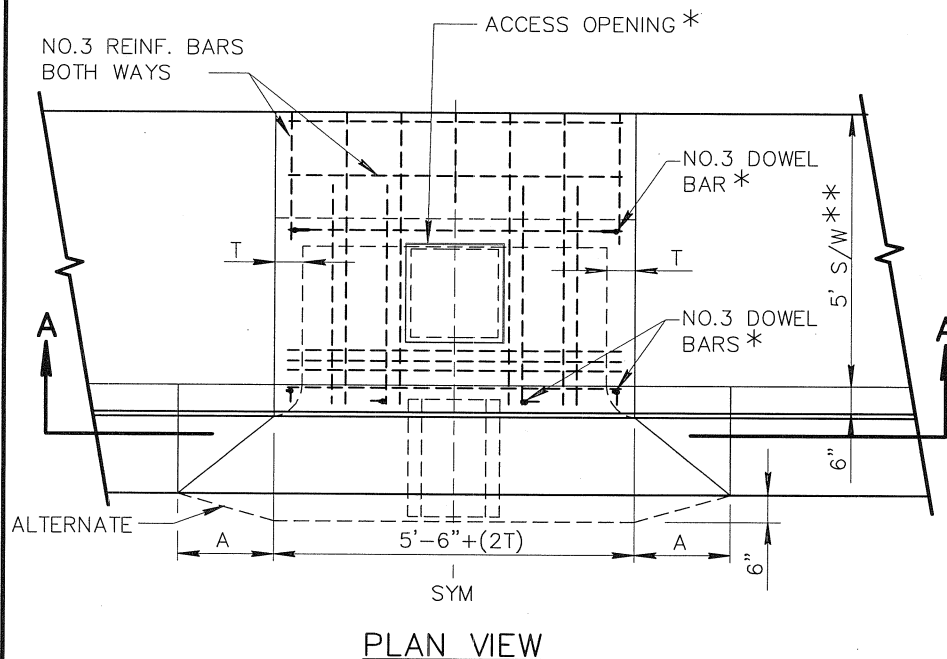
DIMENSIONS

T=6" IF V=4' OR LESS  
T=8" IF V IS BETWEEN 4' AND 8'  
T=10" IF V IS 8' OR MORE (IF V EXCEEDS 10' SPECIAL DESIGN IS REQUIRED)  
V=3'-6" UNLESS OTHERWISE SPECIFIED.

CURB	A
4"	3'-3"
6"	1'-9"
7"	1'-0"

\* SEE DETAILS 536-1 AND 536-2 FOR DETAILS AND SECTIONS COMMON TO ALL CURB OPENING CATCH BASINS.

\*\* 4' LOCATIONS WHERE 4' S/W IS REQUIRED.



PLAN VIEW

DETAIL NO.

531



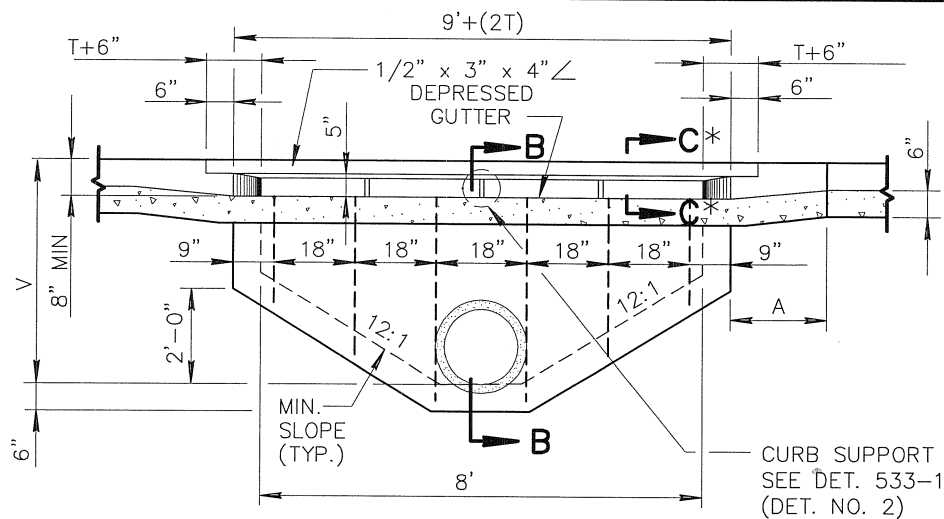
STANDARD DETAIL  
ENGLISH

5'-6" CURB OPENING  
CATCH BASIN - TYPE 'B'

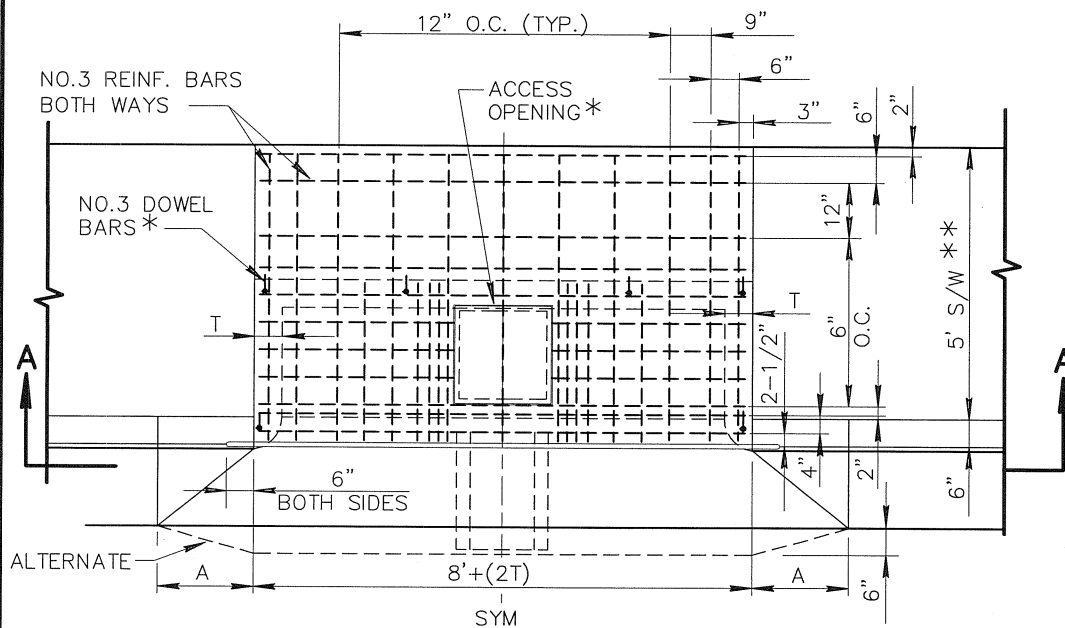
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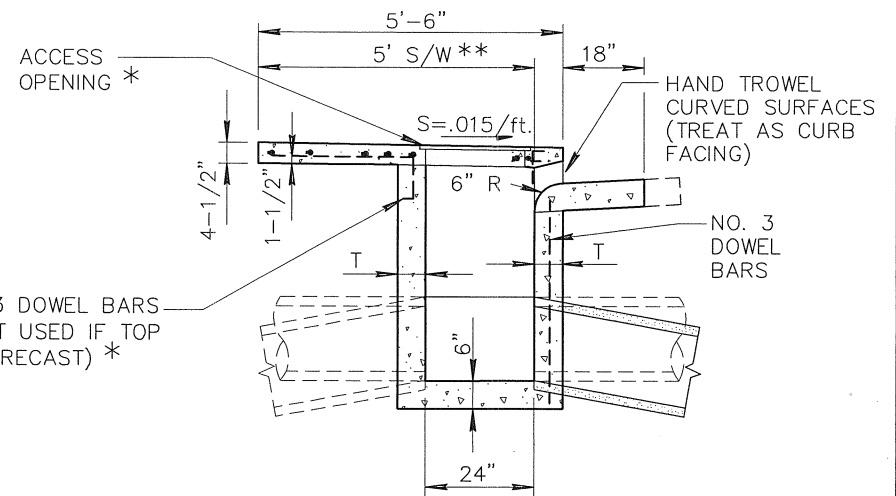
531



SECTION A-A



PLAN VIEW



SECTION B-B

**NOTES:**

1. THE ENTIRE CATCH BASIN COVER MAY BE POURED IN PLACE OR PRECAST.
2. CONNECTION PIPES MAY BE PLACED IN ANY POSITION AROUND THE WALLS PROVIDED THE POSITION IS CONSISTENT WITH THE PLAN.
3. OUTLET PIPE SHALL BE TRIMMED TO FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
4. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
5. ALL STRUCTURAL STEEL TO BE PAINTED ONE SHOP COAT OF NO.1 D PAINT AND TWO FIELD COATS OF NO. 10 PAINT AS PER SECT. 790.
6. CONCRETE SHALL BE CLASS A PER SECTION 725.

CURB	A
4"	3'-3"
6"	1'-9"
7"	1'-0"

**DIMENSIONS**

T=6" IF V=4' OR LESS  
T=8" IF V IS BETWEEN 4' AND 8'  
T=10" IF V IS 8' OR MORE (IF V EXCEEDS 10' SPECIAL DESIGN IS REQUIRED)  
V=4' UNLESS OTHERWISE SPECIFIED.

\* SEE DETAILS 536-1 AND 536-2 FOR DETAILS AND SECTIONS COMMON TO ALL CURB OPENING CATCH BASINS.  
\*\* 4' LOCATIONS WHERE 4' S/W IS REQUIRED.

DETAIL NO.  
**532**

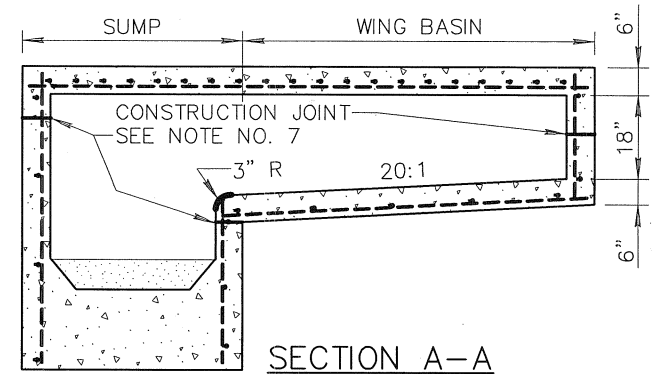
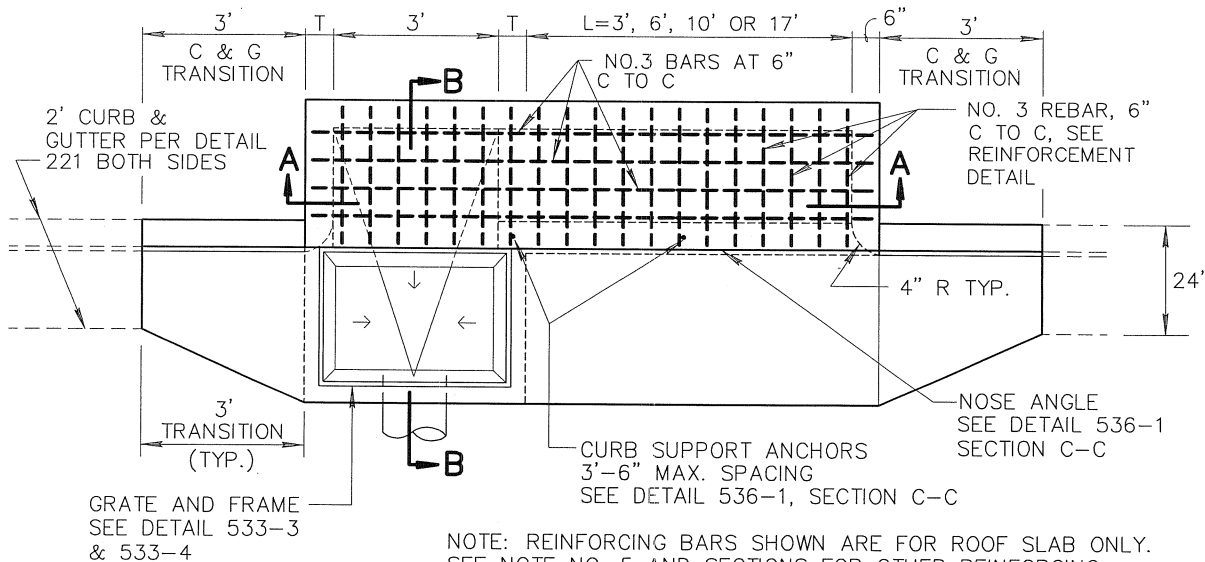


**STANDARD DETAIL  
ENGLISH**

**8'-0" CURB OPENING  
CATCH BASIN - TYPE 'C'**

REVISED

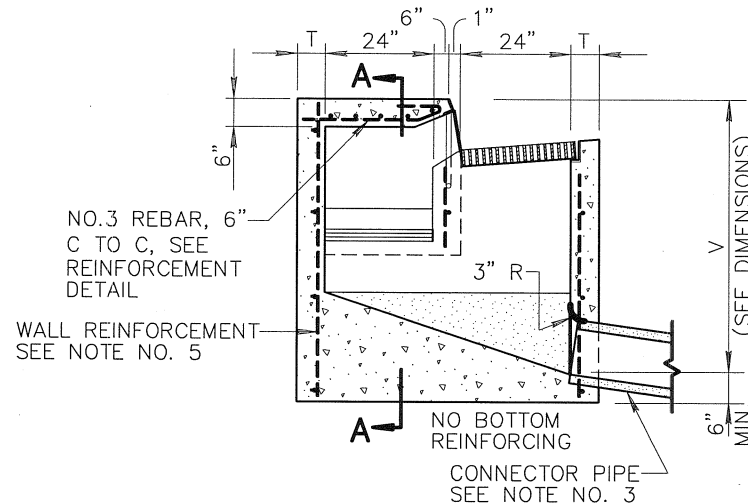
DETAIL NO.  
**532**



### NOTES:

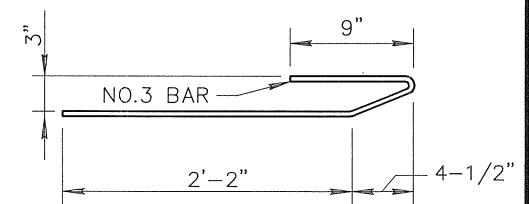
1. SINGLE C.B. (ILLUSTRATED), SUMP WITH WING BASIN UPSTREAM.
2. DOUBLE C.B. SUMP WITH SYMMETRICAL WING BASINS EACH SIDE.
3. PIPES CAN BE PLACED IN ANY WALL EXCEPT WALL ADJACENT TO A WING BASIN. PIPE SHALL BE TRIMMED TO FINAL SHAPE AND LENGTH BEFORE CONCRETE IS PLACED.
4. SUMP FLOOR SHALL HAVE A WOOD TROWEL FINISH AND A MIN. SLOPE OF 4:1 IN ALL DIRECTIONS TOWARD OUTLET PIPE.
5. ALL REFORCING BARS SHALL BE NO.4 18" C TO C BOTH WAYS AND 1-1/2" CLEAR TO INSIDE OF WALLS AND OUTSIDE WING BASIN FLOOR EXCEPT AS SHOWN. SEE SECT. 727.
6. ALL CONCRETE SHALL BE CLASS 'A', PER SECT. 725.
7. CONSTRUCTION JOINTS SHALL BE PLACED TO MEET FIELD CONDITIONS.
8. ALL EXPOSED STEEL SHALL BE GALVANIZED OR PAINTED WITH ONE SHOP COAT OF #1 PAINT AND TWO FIELD COATS OF #10 PAINT.

### PLAN VIEW



### DIMENSIONS

- V = 3'-3" MIN. WHEN L = 3'
- V = 3'-5" MIN. WHEN L = 6'
- V = 3'-7" MIN. WHEN L = 10'
- V = 4'-0" MIN. WHEN L = 17'
- T = 6" WHEN V IS LESS THAN 8'
- T = 8" WHEN V IS EQUAL TO OR GREATER THAN 8'
- H = CURB HEIGHT PRIOR TO THE TRANSITION



DETAIL NO.

533-1



STANDARD DETAIL  
ENGLISH

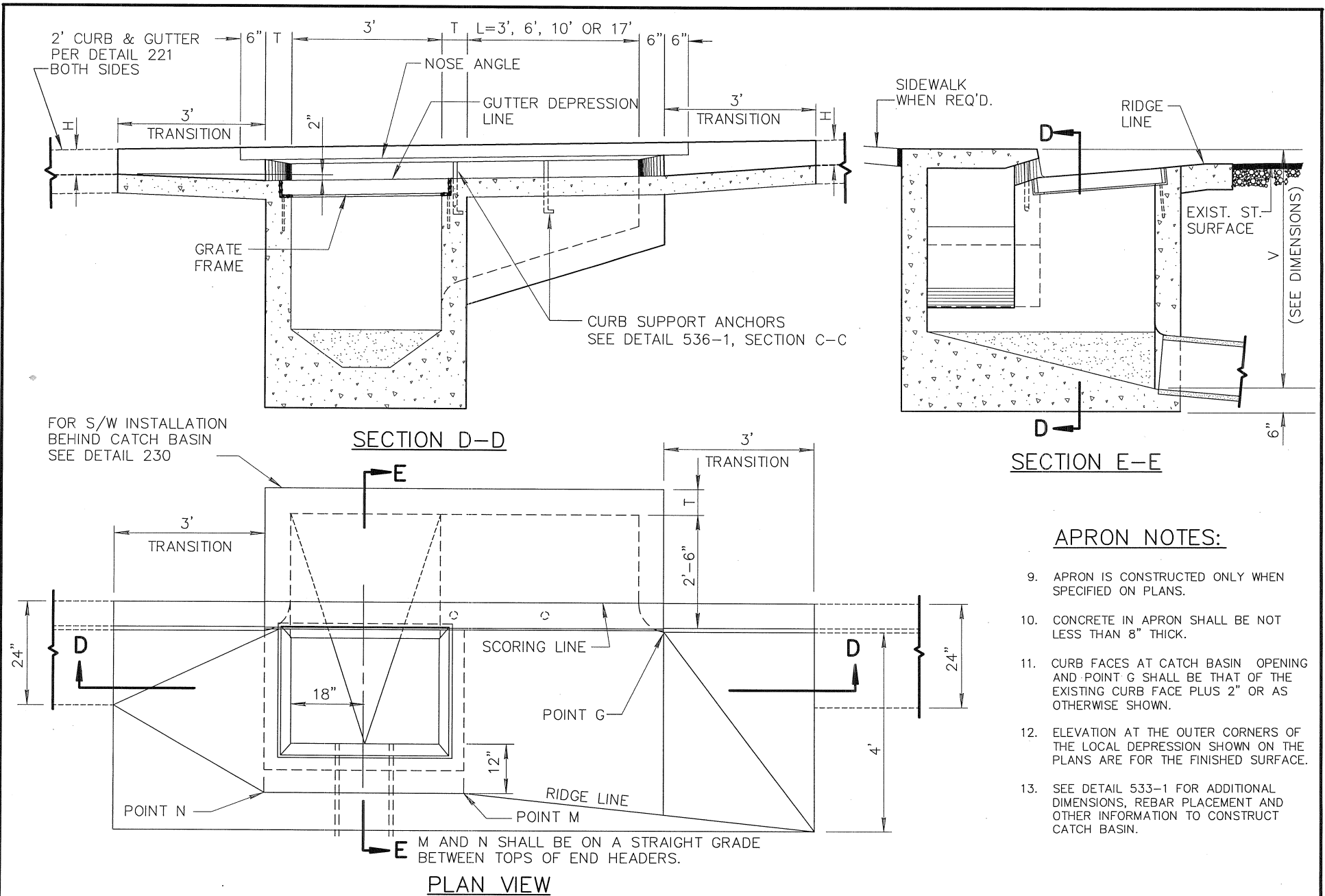
CATCH BASIN TYPE 'D'

REVISED

DETAIL NO.

533-1





DETAIL NO.  
**533-2**

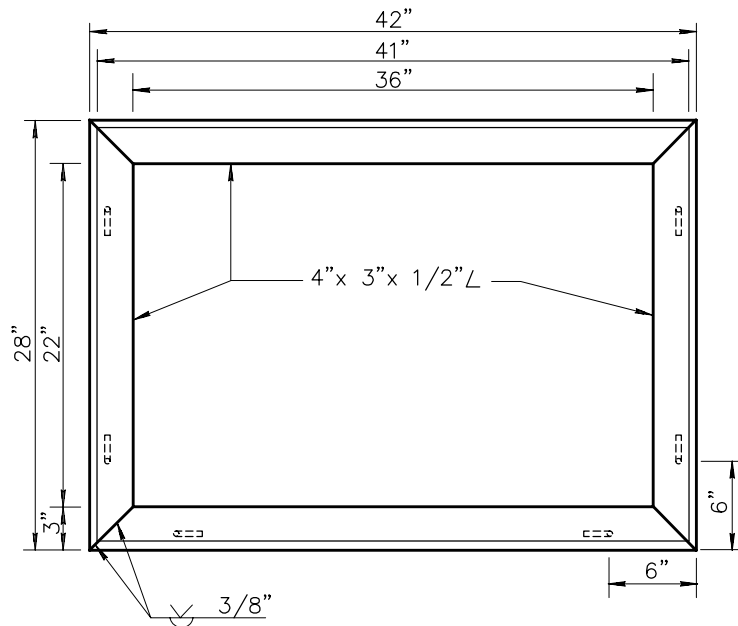


**STANDARD DETAIL  
ENGLISH**

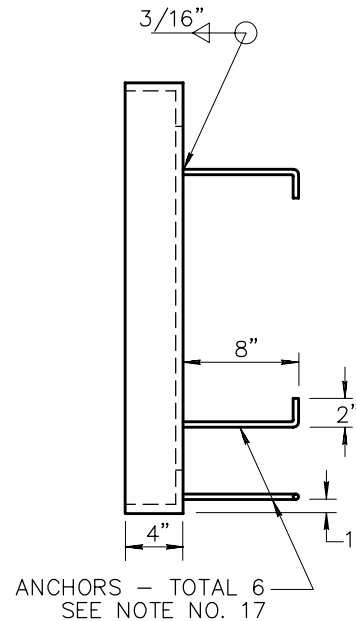
**APRON FOR TYPE 'D' CATCH BASIN**

REVISED

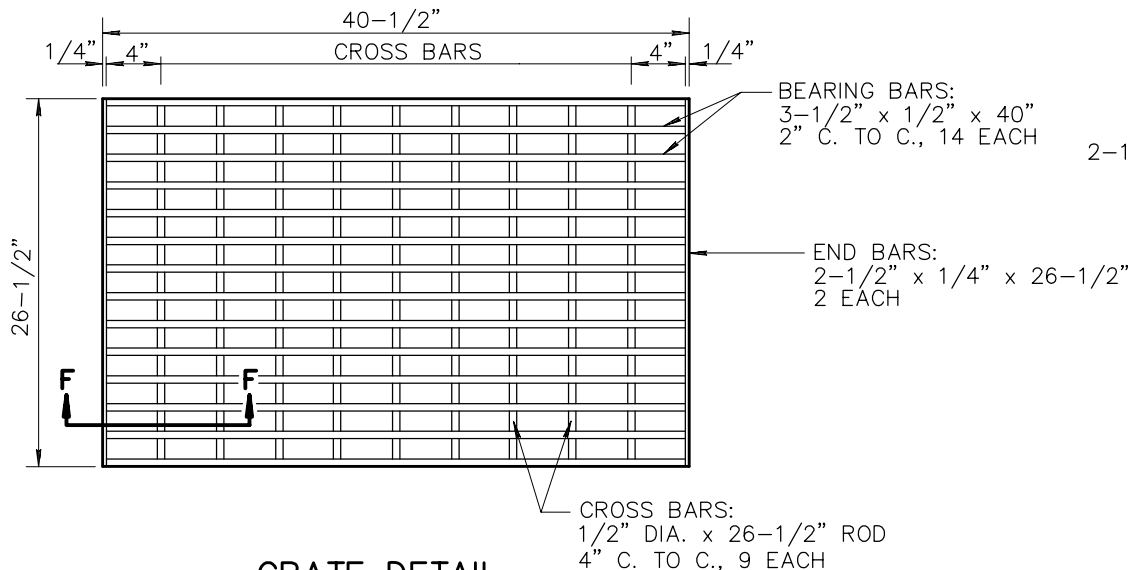
DETAIL NO.  
**533-2**



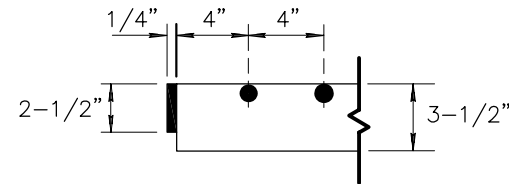
**FRAME DETAIL**



- FRAME AND GRATE NOTES**
14. FRAME AND GRATING SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY.
  15. ALL WELDING SHALL BE IN ACCORDANCE WITH STANDARD WELDING SPECIFICATIONS.
  16. CROSS BARS AND END BARS MAY BE FILLET WELDED, RESISTANCE WELDED OR ELECTRO FORGED TO BEARING BARS.
  17. ANCHORS SHALL BE 3/8" DIA. STEEL ROD, NO. 3 REBAR, 3/8" DIA. x 8" BOLTS OR 8" NELSON STUDS.
  18. ALL PARTS SHALL BE OF STRUCTURAL GRADE STEEL.
  19. ALL EXPOSED STEEL SHALL BE GALVANIZED OR PAINTED WITH ONE COAT #1 PAINT AND TWO FIELD COATS OF #10 PAINT.



**GRATE DETAIL**



**SECTION F-F**

DETAIL NO.

**533-3**



STANDARD DETAIL  
ENGLISH

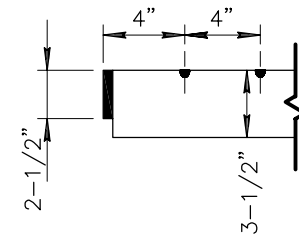
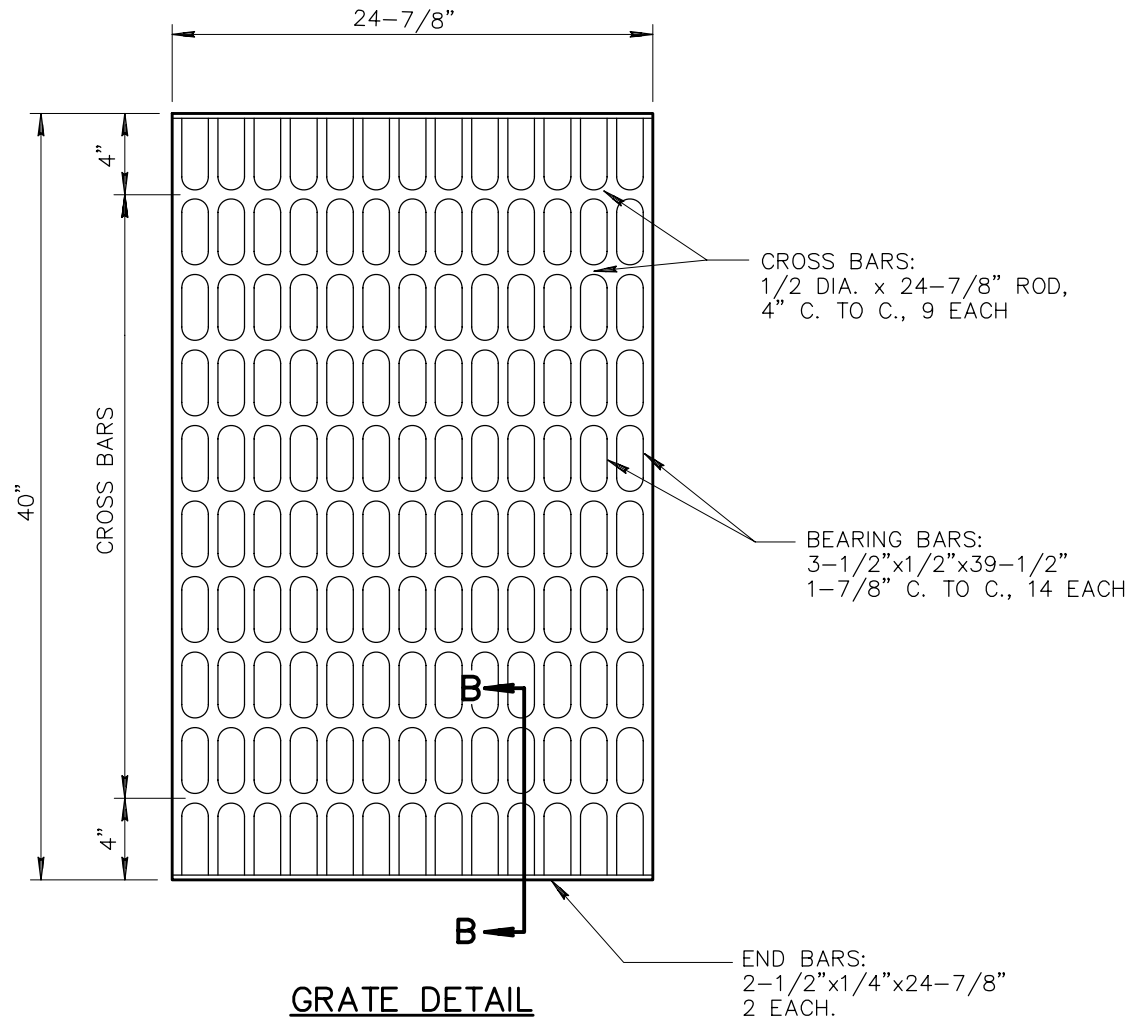
**FRAME AND GRATE  
FOR TYPE 'D' CATCH BASIN**

REVISED

01-01-2007

DETAIL NO.

**533-3**



**SECTION B-B**

**GRATE DETAIL**

GRATE OPENING: 4.344 SQ. FT.

DETAIL NO.

**533-4**



STANDARD DETAIL  
ENGLISH

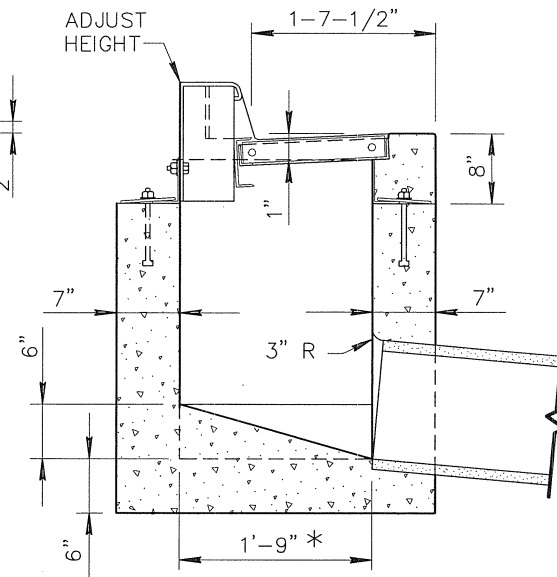
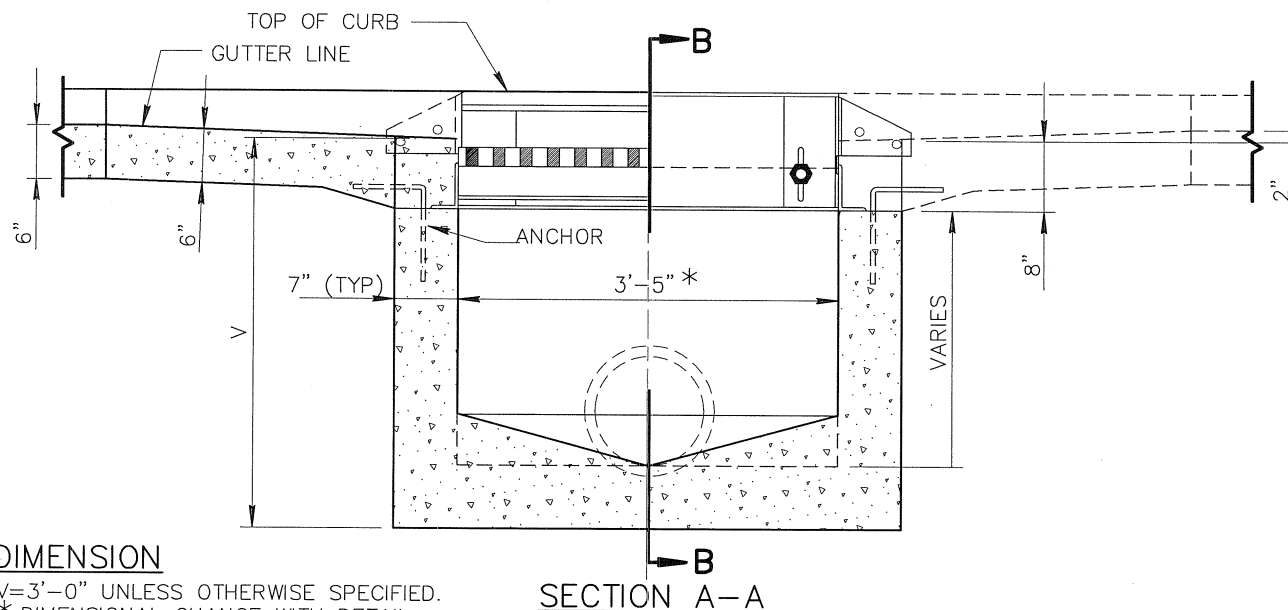
**7'-0" CURB OPENING CATCH BASIN  
TYPE 'D' - GRATE DETAILS**

REVISED

01-01-2007

DETAIL NO.

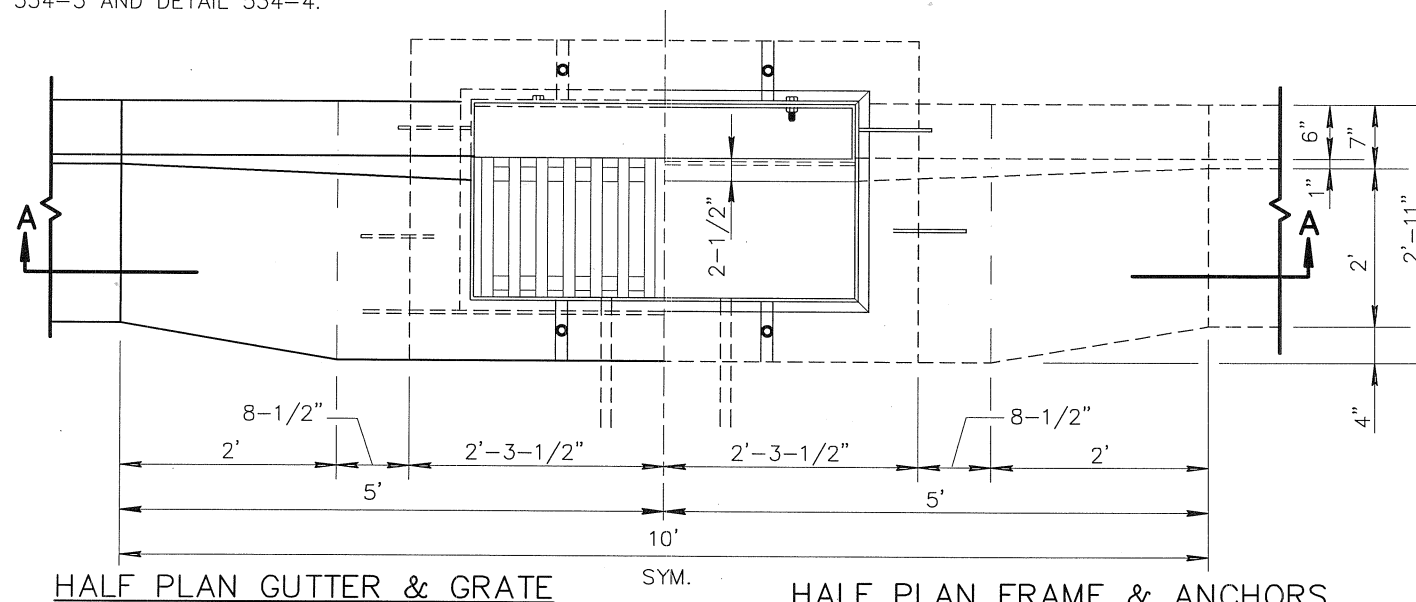
**533-4**



#### DIMENSION

V=3'-0" UNLESS OTHERWISE SPECIFIED.

\* DIMENSIONAL CHANGE WITH DETAIL 534-3 AND DETAIL 534-4.



#### NOTES:

1. ADJUSTABLE CURB, FRAME AND GRATING UNITS SHALL BE STRUCTURAL STEEL OR CAST IRON
2. PIPES MAY ENTER OR LEAVE ANY WALL. BOTTOM OF BOX TO BE SLOPED TO OUTLET PIPE FROM ALL DIRECTIONS AND TROWELLED TO A HARD SMOOTH SURFACE.
3. CONNECTION PIPES MAY BE PLACED IN ANY POSITION AROUND THE WALLS PROVIDED THE POSITION IS CONSISTENT WITH THE PLAN.
4. OUTLET PIPE SHALL BE TRIMMED TO FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
5. ALL STRUCTURAL STEEL TO BE PAINTED ONE SHOP COAT OF NO. 1 PAINT AND TWO FIELD COATS OF NO. 10 PAINT AS PER SECT. 790.
6. ALL CONCRETE, CLASS 'A' AS PER SECTION 725.

DETAIL NO.

534-1



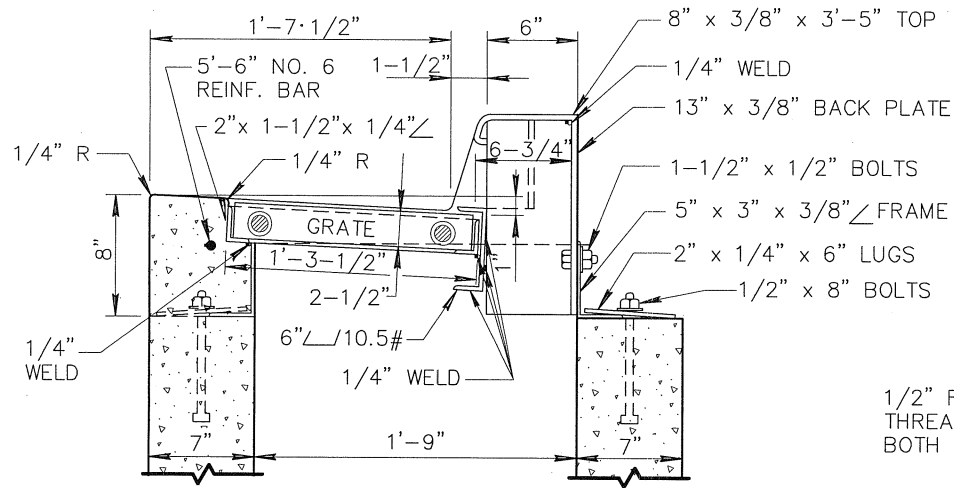
STANDARD DETAIL  
ENGLISH

CATCH BASIN TYPE 'E'

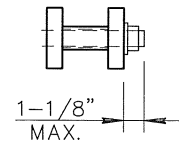
REVISED

DETAIL NO.

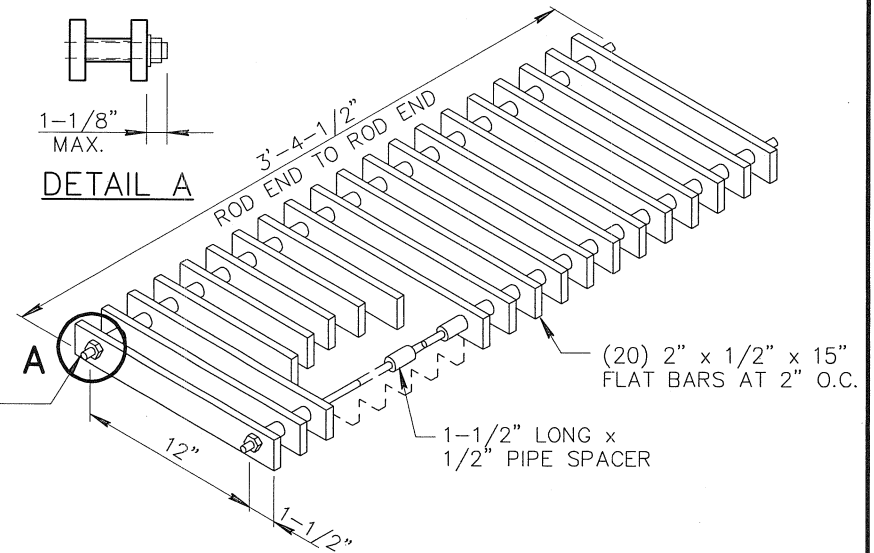
534-1



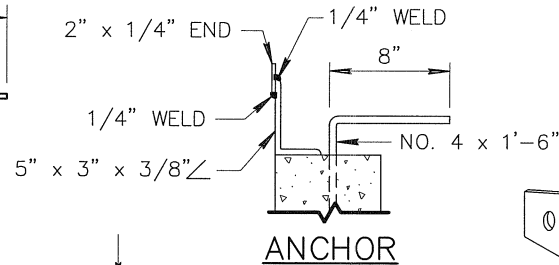
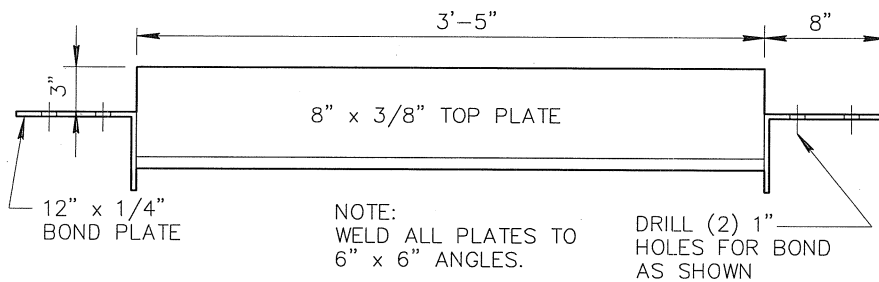
CROSS SECTION



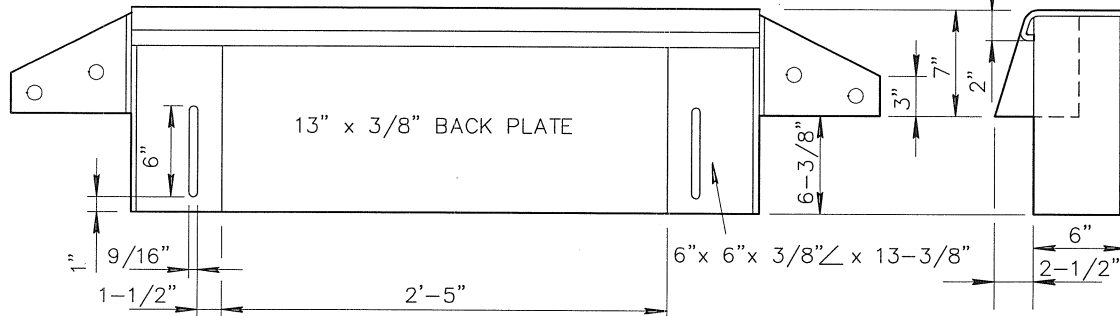
DETAIL A



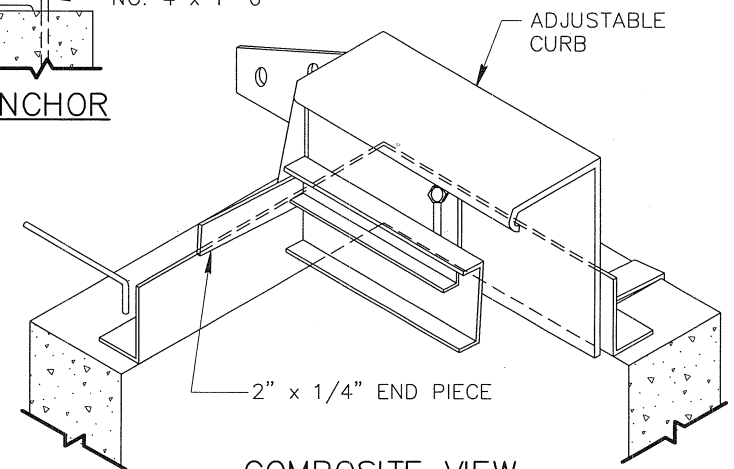
GRATE



ANCHOR



ADJUSTABLE CURB



COMPOSITE VIEW

DETAIL NO.  
534-2

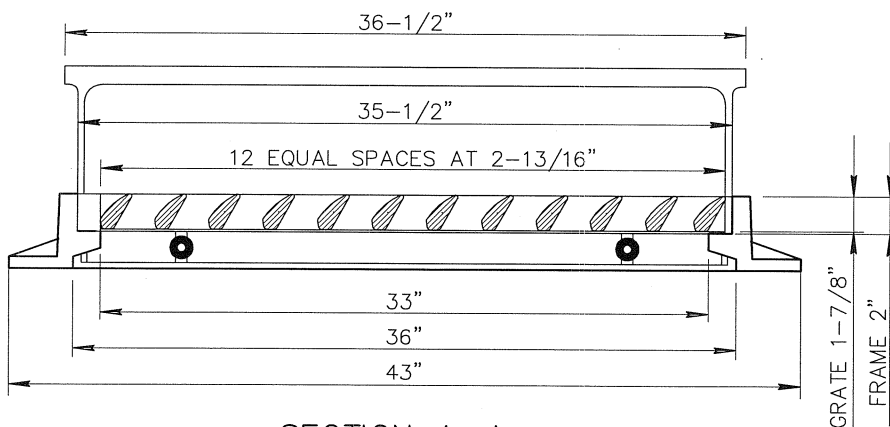
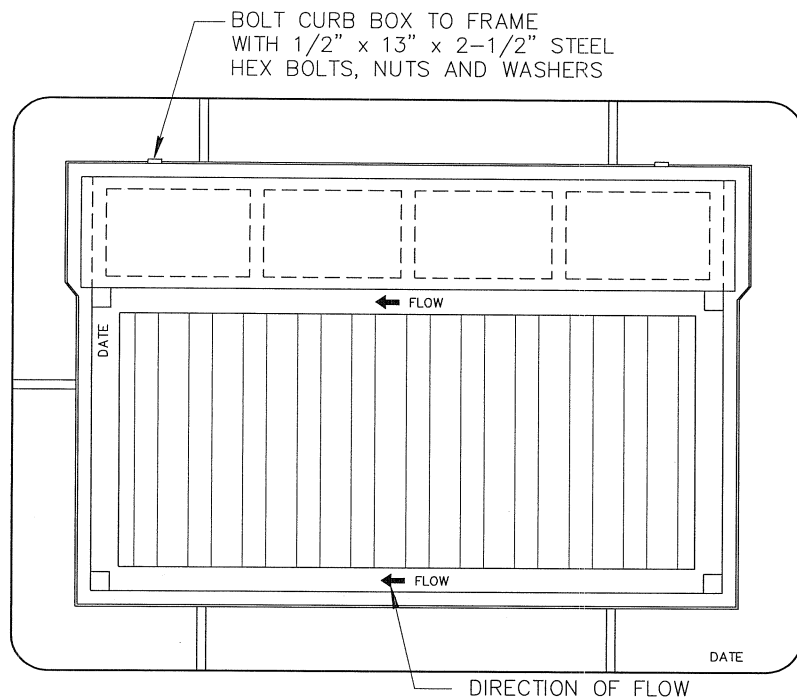


STANDARD DETAIL  
ENGLISH

CATCH BASIN TYPE 'E' (DETAILS)

REVISED

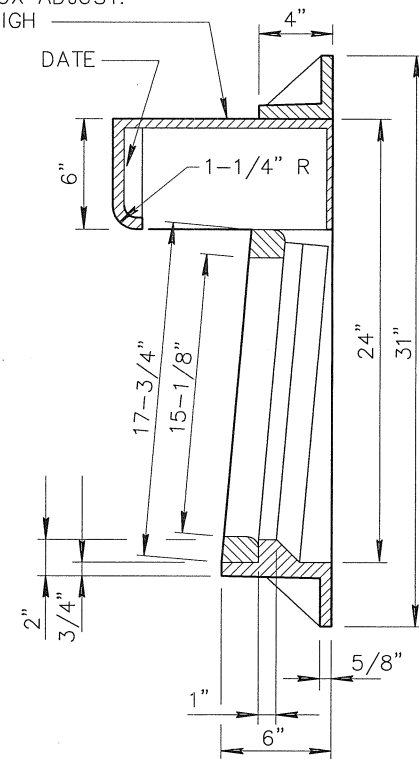
DETAIL NO.  
534-2



SECTION A-A

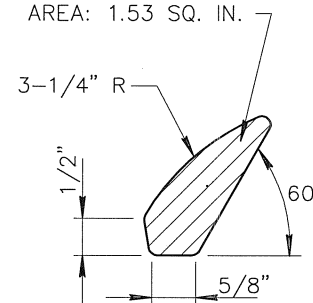
CAST IRON FRAME — GRATE — CURB BOX

CURB BOX ADJUST.  
TO 9" HIGH



SECTION B-B

CROSS-SECTIONAL  
AREA: 1.53 SQ. IN.



VANE DETAIL

**NOTE:**

DIMENSIONAL CHANGE REQUIRED FROM 3'-5"  
WIDTH TO 3'-0" AND 1'-9" DEPTH TO 2'-0"  
MATERIAL CAST GRAY IRON ASTM A-48-83 CLASS 35B.  
FRAME WEIGHT 209 LBS; GRATE 140 LBS; CURB BOX 92 LBS.

DETAIL NO.

534-3



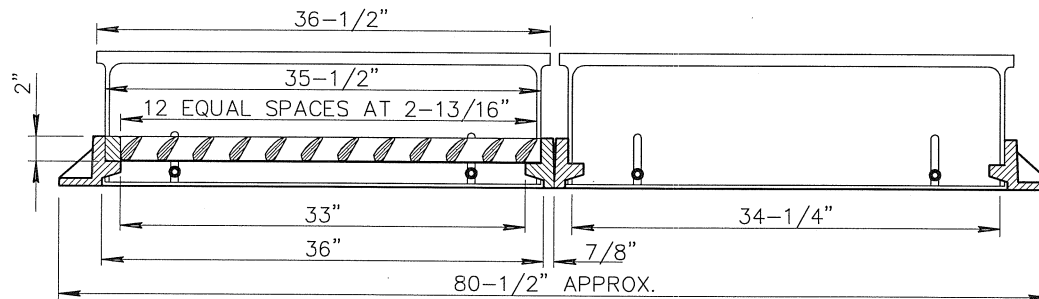
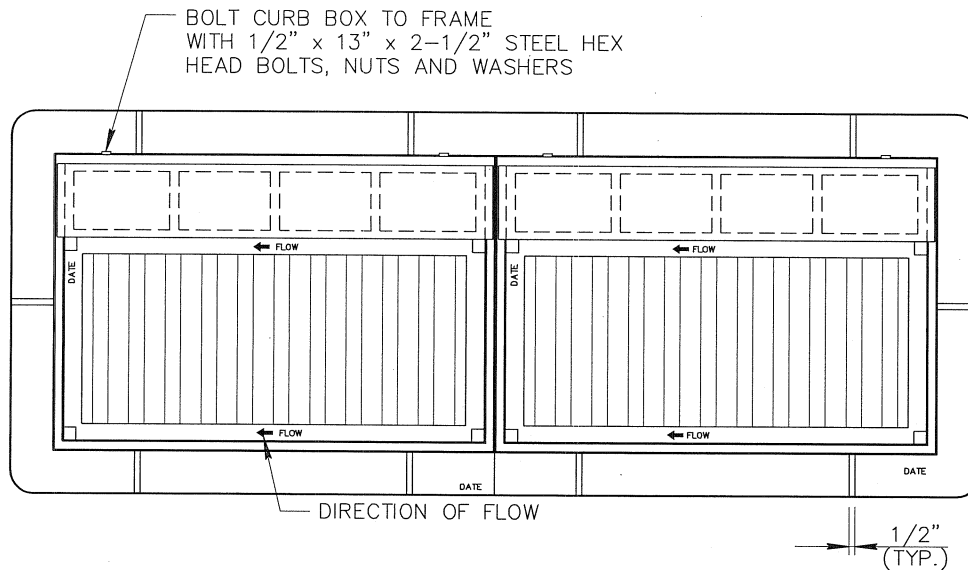
**STANDARD DETAIL  
ENGLISH**

**CATCH BASIN TYPE 'E' (DETAILS)**

REVISED

DETAIL NO.

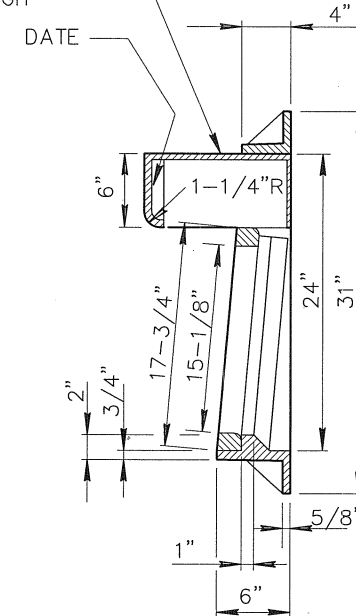
534-3



SECTION A-A

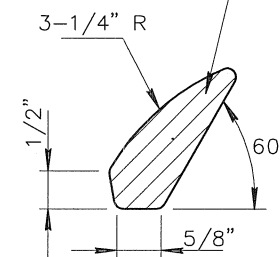
DOUBLE UNIT CAST IRON FRAME — GRATE — CURB BOX

CURB BOX ADJUST.  
TO 9\"



SECTION B-B

CROSS-SECTIONAL  
AREA: 1.53 SQ. IN.



VANE DETAIL

NOTE:

DIMENSIONAL CHANGE REQUIRED FROM 3'-5\"/>

DETAIL NO.

534-4



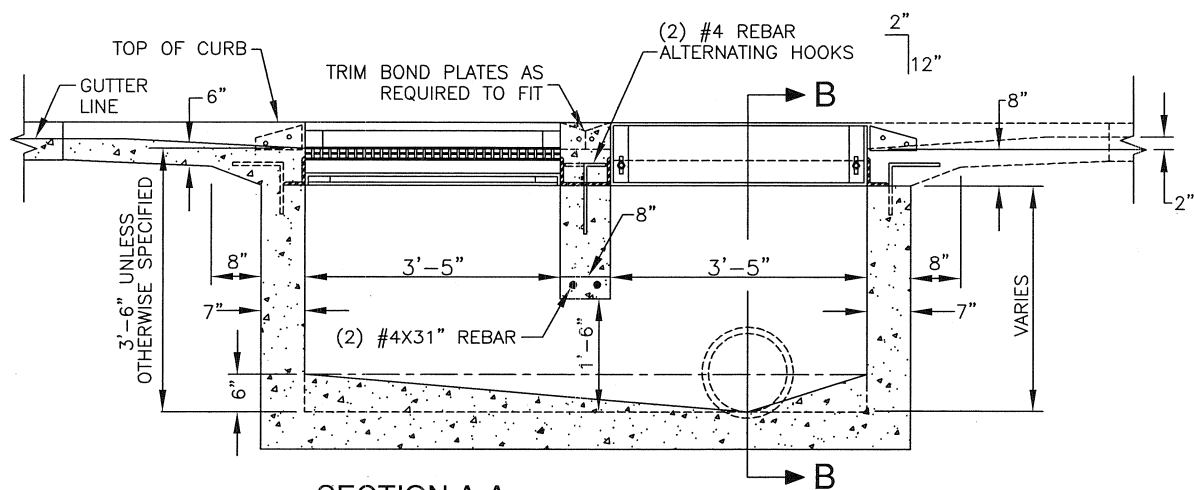
STANDARD DETAIL  
ENGLISH

CATCH BASIN TYPE 'E' (DETAILS)

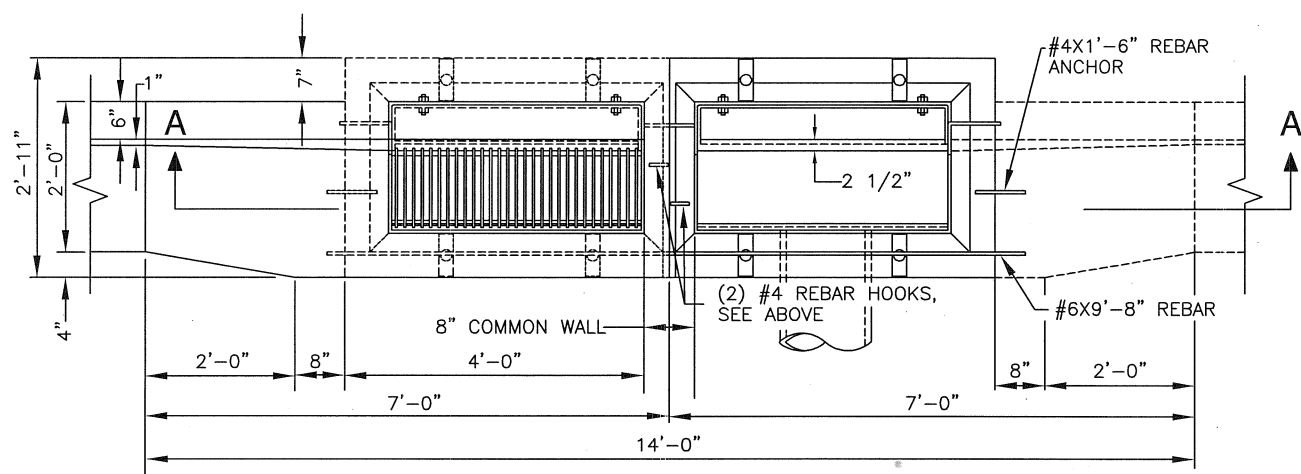
REVISED

DETAIL NO.

534-4



SECTION A-A



HALF PLAN GUTTER & GRATE

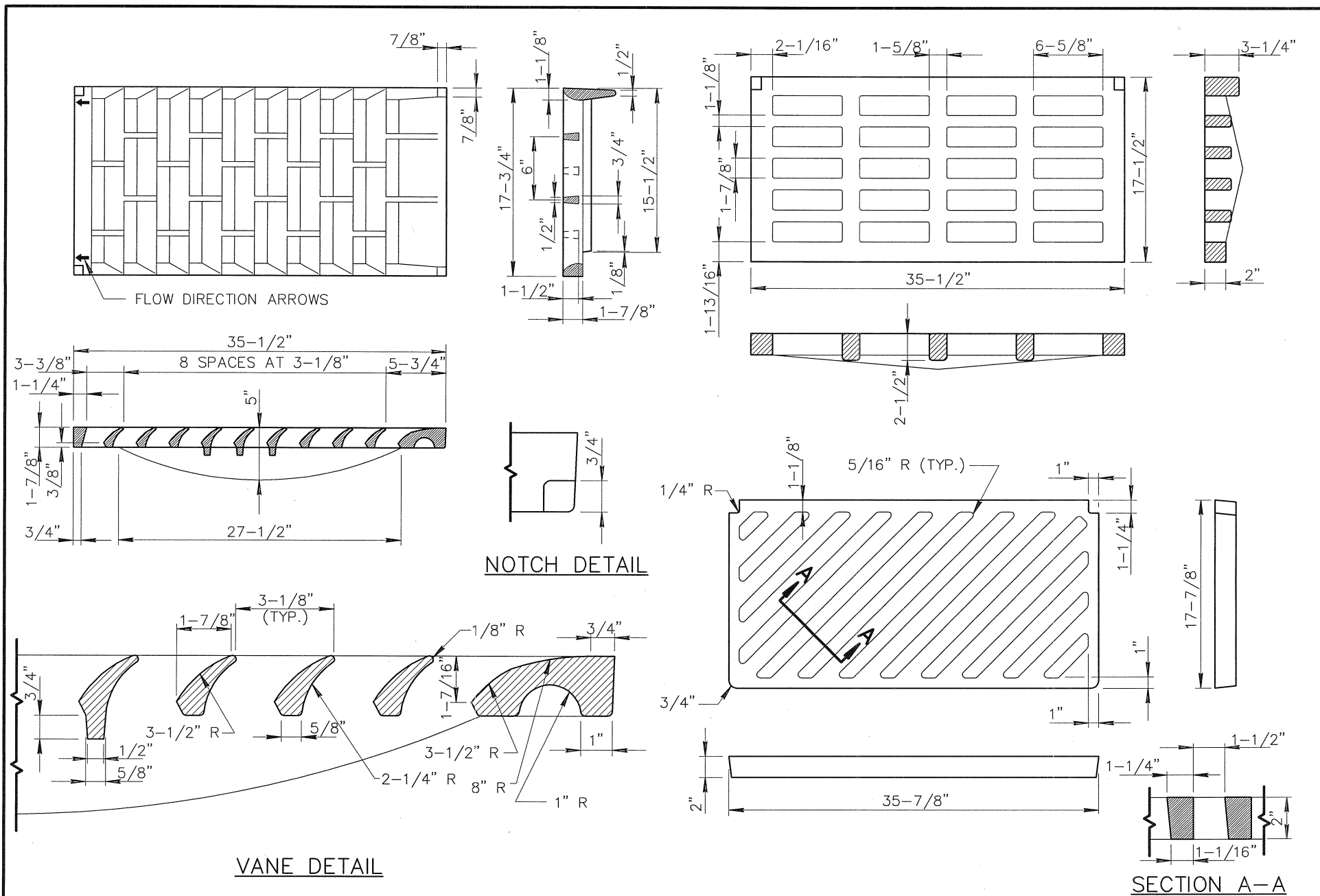
HALF PLAN FRAME & ANCHORS

NOTES

1. ADJUSTABLE CURB, FRAME, AND GRATING UNITS SHALL COMPLY WITH MAG STD DETAIL 534
2. PIPE MAY ENTER OR LEAVE ANY WALL. BOTTOM OF BOX TO BE SLOPED TO OUTLET PIPE FROM ALL DIRECTIONS AND TROWELLED TO A HARD SMOOTH SURFACE.
3. CONNECTION PIPES MAY BE PLACED IN ANY POSITION AROUND THE WALLS PROVIDED THE POSITION IS CONSISTENT WITH THE PLAN
4. OUTLET PIPE SHALL BE TRIMMED TO FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
5. ALL STRUCTURAL STEEL TO BE PAINTED ONE SHOP COAT OF NO. 1 D PAINT AND TWO FIELD COATS OF NO. 10 PAINT PER MAG SECTION 790.
6. ALL REINFORCING TO HAVE A MINIMUM OF 2" COVER.
7. FOR DETAIL OF CURB FRAME, GRATING AND ANCHORS REFER TO MAG STD DETAIL 534-2, 534-3, OR THE VANED GRATE OF 534-5.
8. ALL CONCRETE SHALL BE CLASS 'A' PER MAG SECTION 725.

FOR SECTION B-B, SEE  
MAG STD DETAIL 534-1





DETAIL NO.  
534-5

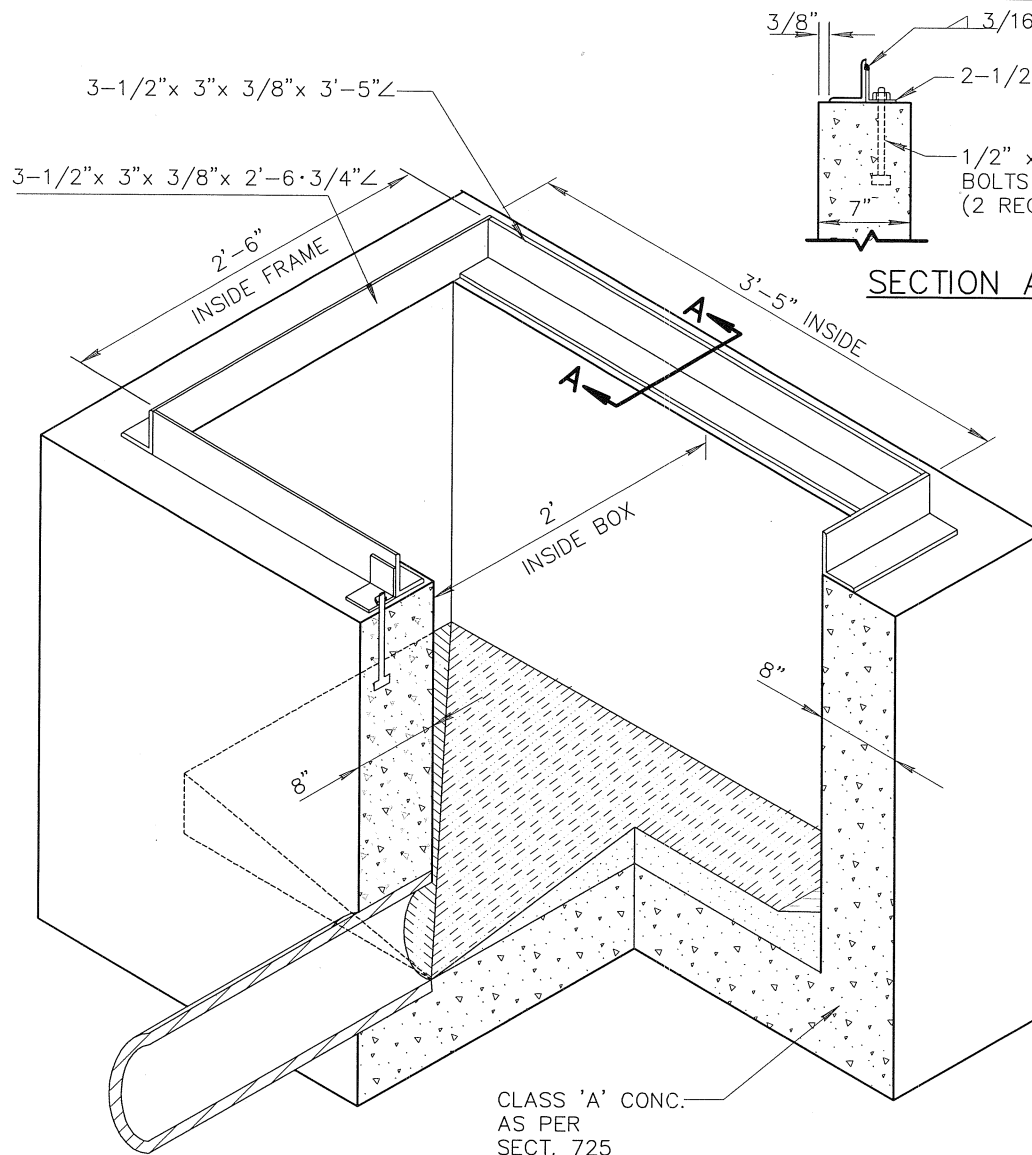


STANDARD DETAIL  
ENGLISH

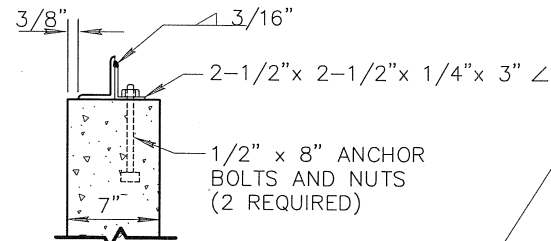
ALTERNATE GRATE STYLES  
SUMP LOCATION

REVISED

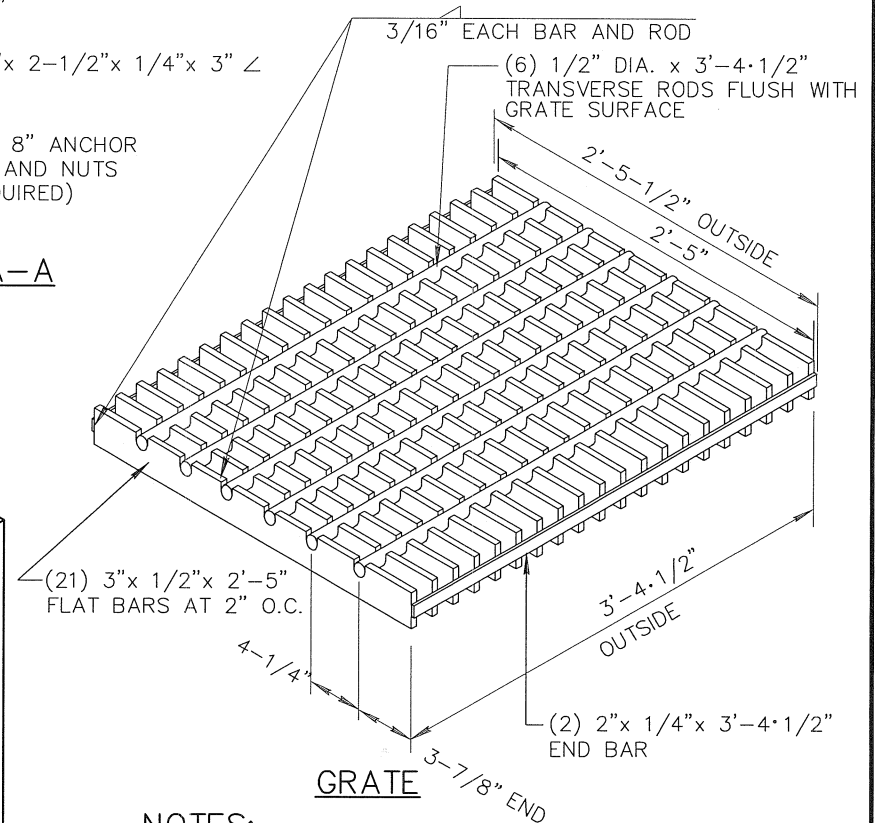
DETAIL NO.  
534-5



NOTE:  
CONSTRUCT BOX AS PER CATCH BASIN TYPE 'E'  
(LOWER PORTION ONLY).



SECTION A-A



### NOTES:

1. PIPES MAY ENTER OR LEAVE ANY WALL. BOTTOM OF BOX TO BE SLOPED TO OUTLET PIPE FROM ALL DIRECTIONS AND TROWELLED TO A HARD SMOOTH SURFACE.
2. CONNECTION PIPES MAY BE PLACED IN ANY POSITION AROUND THE WALLS PROVIDED THE POSITION IS CONSISTENT WITH THE PLAN.
3. OUTLET PIPE SHALL BE TRIMMED TO FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
4. ALL STRUCTURAL STEEL TO BE PAINTED ONE SHOP COAT OF NO. 1 PAINT AND TWO FIELD COATS OF NO. 10 PAINT AS PER SECT. 790.
5. ALL WELDS ON FRAME AND SIDE BARS ON GRATE SHALL BE FULL LENGTH OF JOINT.

DETAIL NO.  
**535**

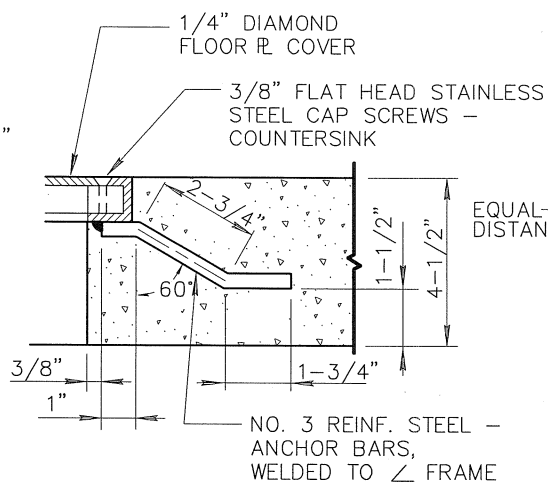


**STANDARD DETAIL  
ENGLISH**

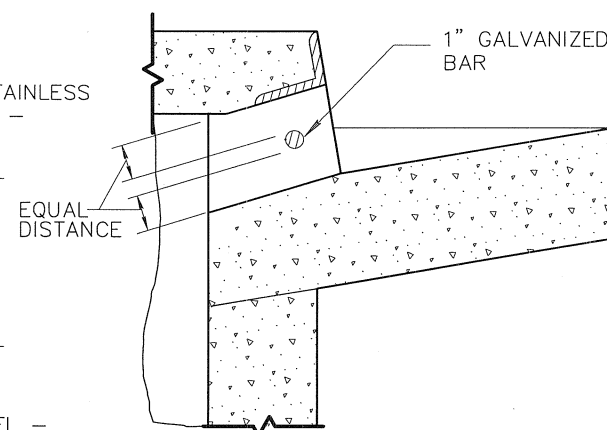
**CATCH BASIN TYPE 'F'  
(FOR USE WITHOUT CURB)**

REVISED

DETAIL NO.  
**535**



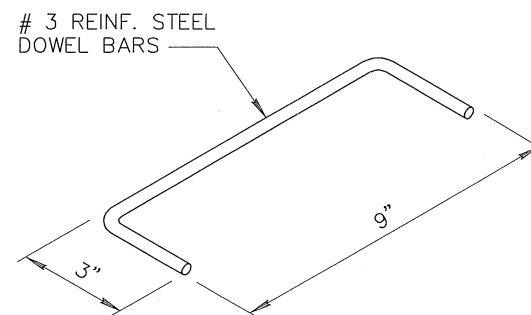
SECTION D-D



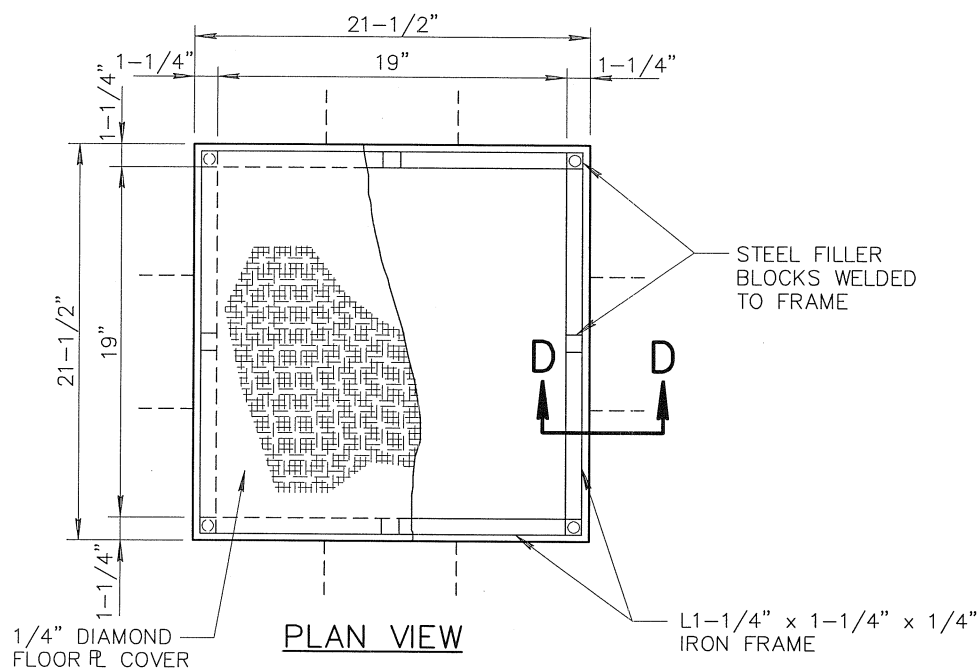
PROTECTION BAR

NOTES:

- 1) HORIZONTAL PLAIN ROUND GALVANIZED STEEL PROTECTION BAR SHALL BE USED WHEN CURB FACE IS 9" OR MORE.
- 2) THE BAR SHALL BE EMBEDDED 5" AT EACH END.



DOWEL BAR



PLAN VIEW



**MARICOPA  
ASSOCIATION of  
GOVERNMENTS**

STANDARD DETAIL  
ENGLISH

## COMMON DETAILS AND SECTIONS FOR CURB OPENING CATCH BASINS

REVISÉD

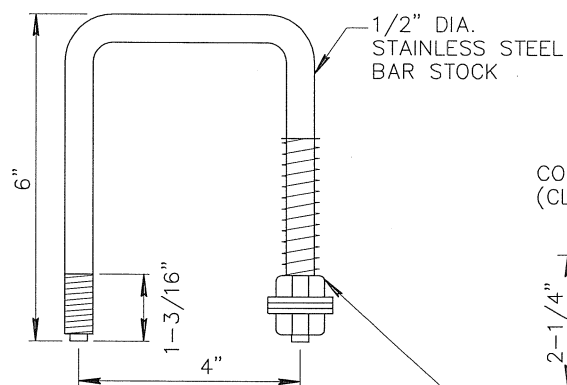
DETAIL NO.  
536-1



PLAN VIEW



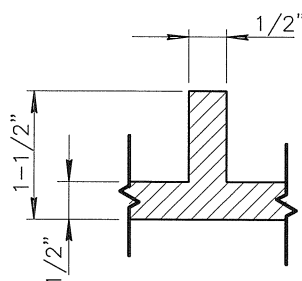
SECTION A-A



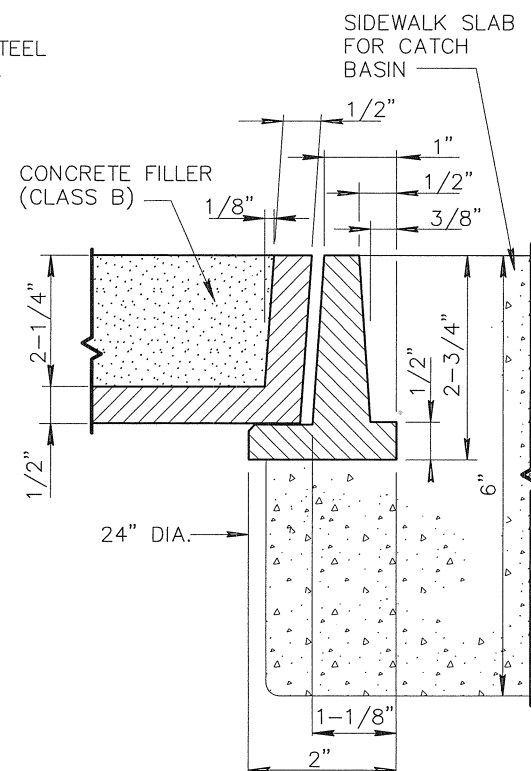
FURNISH FOR EACH SIDE OF HANDLE

- 1 EACH 304-S.STL. SPRING  
2-1/2" x 17/32" I.C. x 3/32"
- 2 EACH 1/2" HEX NUT
- 3 EACH 1/2" FLAT WASHER
- 1 EACH 1/2" LOCK WASHER

DROP HANDLE



SECTION C-C



SECTION B-B

NOTES:

1. FRAME SHALL BE NON-LOCKING.
2. FRAME AND COVER SHALL BE CAST IRON OR ASTM A-36 STRL. HORIZONTAL SURFACE OF COVER IN CONTACT WITH FRAME SHALL BE MACHINED. ASA B-46 ROUGHNESS SHALL NOT EXCEED 1/32".
3. COVER SHALL BE FILLED WITH CONCRETE AND BROOM FINISHED.
4. SMALL VARIATIONS IN DIMENSIONS OF FEATURES OF A MINOR NATURE THAT ARE PART OF THE FOUNDRY'S CASTING ARE PERMISSIBLE.

DETAIL NO.

536-2



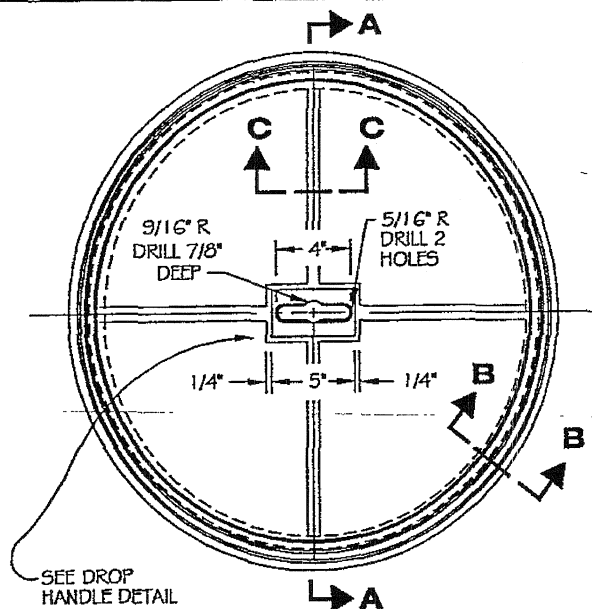
**STANDARD DETAIL  
ENGLISH**

## ALTERNATE COVER FOR CURB OPENING CATCH BASINS

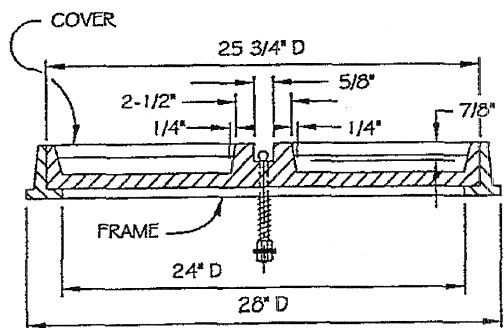
REVISÉD

DETAIL NO.

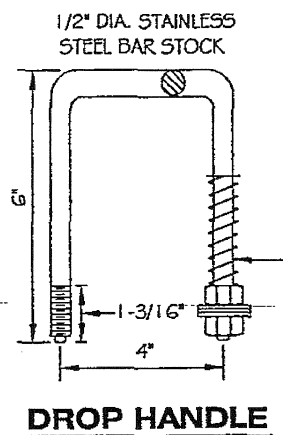
536-2



**PLAN VIEW**

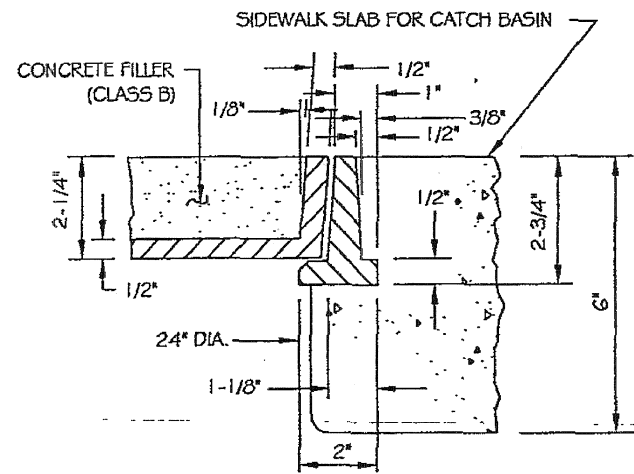


**SECTION A-A**

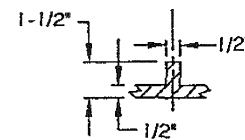


FURNISH FOR EACH SIDE OF HANDLE:

- 1 EA. 304-S.STL. SPRING 2-1/2 X 1 7/32 I.D. X 3/32
- 2 EA. 1/2\"
- 3 EA. 1/2\"
- 1 EA. 1/2\"



**SECTION B-B**



**SECTION C-C**

**NOTES:**

1. FRAME SHALL BE NON-LOCKING.
2. FRAME AND COVER SHALL BE CAST IRON OR ASTM A-36 STL. HORIZONTAL SURFACE OF COVER IN CONTACT WITH FRAME SHALL BE MACHINED, ASA B-46 ROUGHNESS SHALL NOT EXCEED 1/32 INCH.
3. COVER SHALL BE FILLED WITH CONCRETE AND BROOM FINISHED.
4. SMALL VARIATIONS IN DIMENSIONS OF FEATURES OF A MINOR NATURE THAT ARE PART OF THE FOUNDRY'S CASTING ARE PERMISSIBLE.

**C-505**  
REPLACES  
**117**



CITY OF  
CHANDLER  
STANDARD  
DETAIL

**CATCH BASIN ACCESS  
FRAME AND COVER**

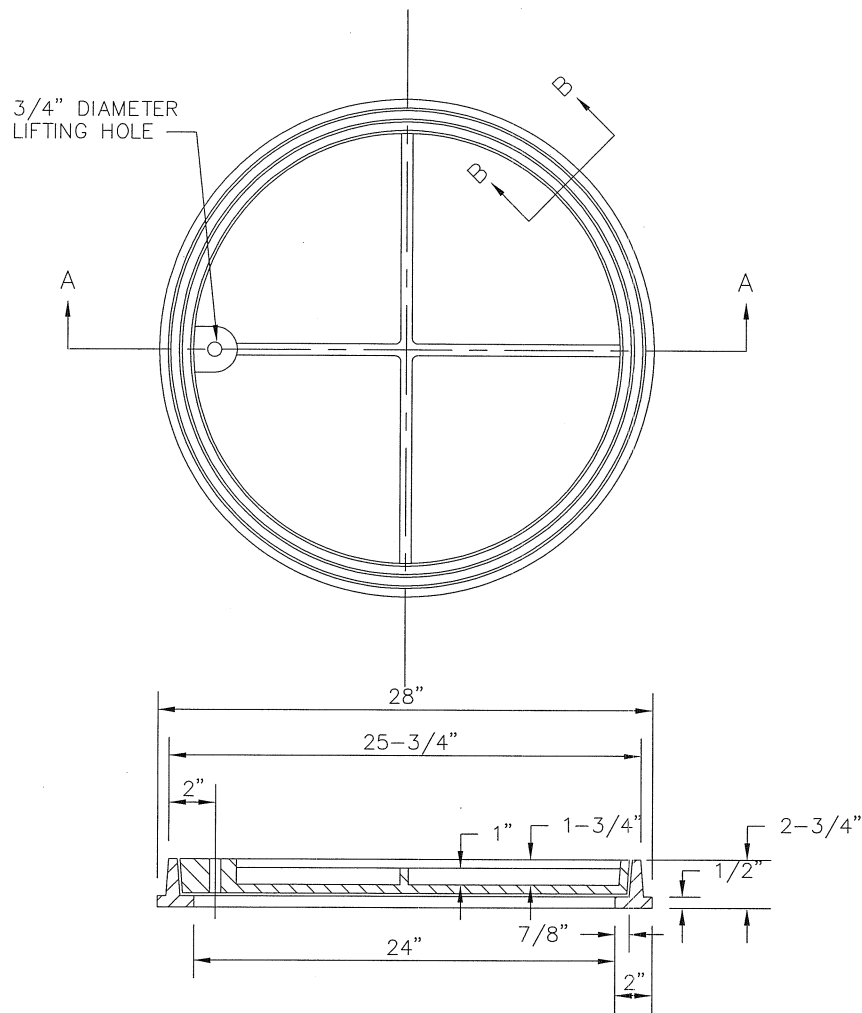
APPROVED:

DATE:

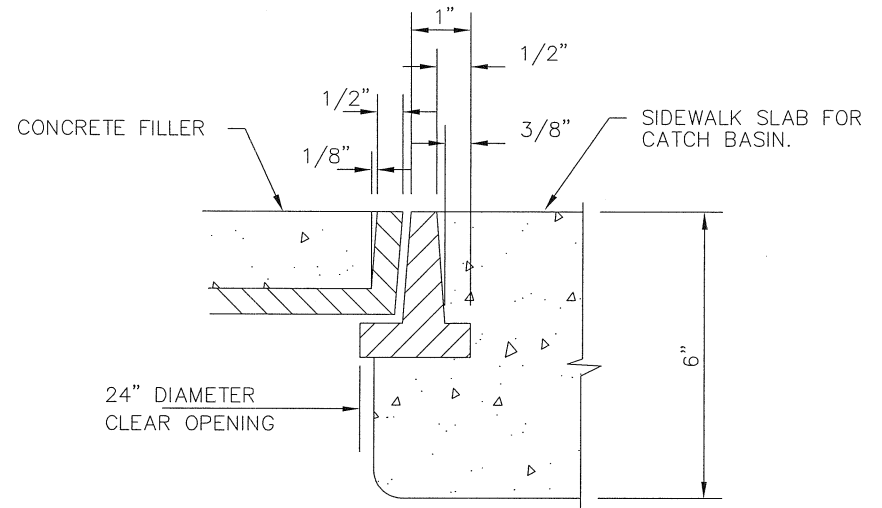
*[Signature]*  
CITY ENGINEER  
11-19-99

DETAIL NO.

**C-505**  
NTS



SECTION A-A



SECTION B-B

#### NOTES

1. COVER SHALL BE NON-LOCKING
2. FRAME AND COVER SHALL BE CAST IRON OR STRUCTURAL STEEL.
3. CATCH BASIN ACCESS FRAME AND COVER IS FOR USE IN SIDEWALK AREA ONLY.
4. COVER SHALL BE FILLED WITH CONCRETE AND BROOM FINISHED.
5. SMALL VARIATIONS IN DIMENSIONS OR FEATURES OF A MINOR NATURE THAT ARE PART OF THE FOUNDRY'S STANDARD CASTING ARE PERMISSIBLE.

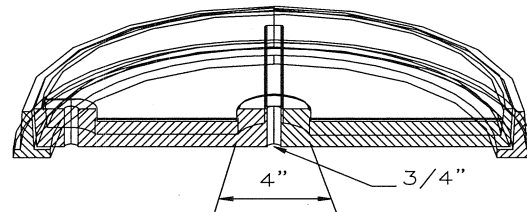
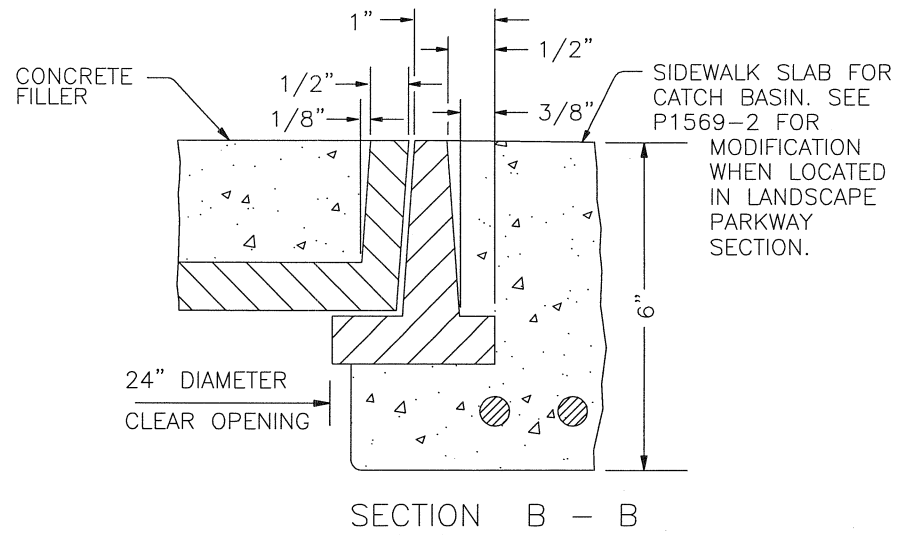
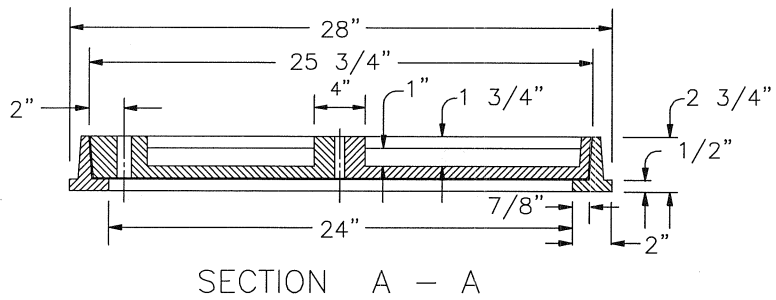
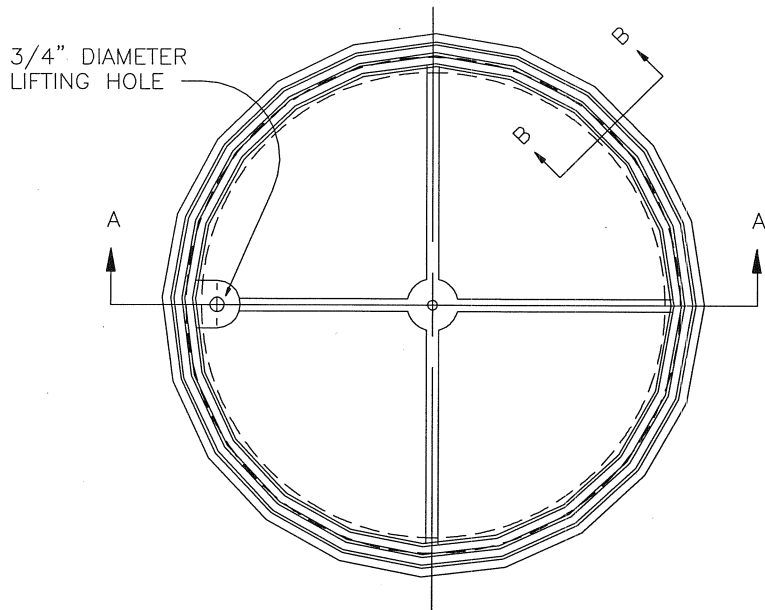
DETAIL NO.  
G-3530

CITY OF GOODYEAR  
STANDARD DETAIL

APPROVED BY:  
Goodyear Standards and  
Policies Committee 7/97

CATCH BASIN ACCESS FRAME AND COVER

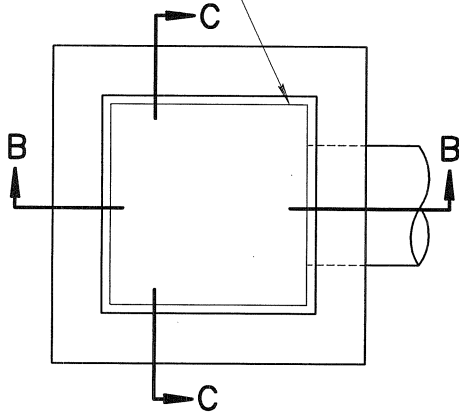
DETAIL NO.  
G-3530



## NOTES

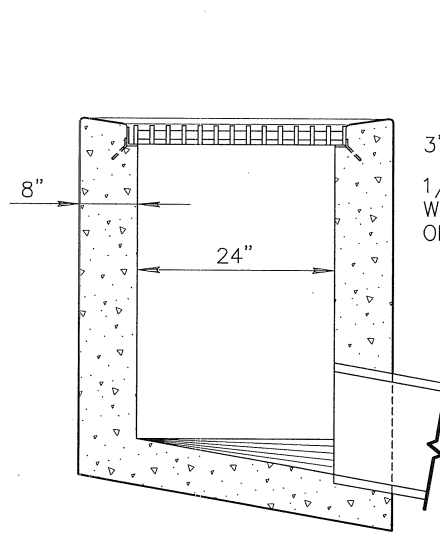
1. COVER SHALL BE NON-LOCKING.
2. FRAME AND COVER SHALL BE CAST IRON OR STRUCTURAL STEEL.
3. CATCH BASIN ACCESS FRAME AND COVER IS FOR USE ON NON VEHICULAR TRAFFIC AREAS ONLY.
4. COVER SHALL BE FILLED WITH CONCRETE AND BROOM FINISHED.
5. SMALL VARIATIONS IN DIMENSIONS OR FEATURES OF A MINOR NATURE THAT ARE PART OF THE FOUNDRY'S STANDARD CASTING ARE PERMISSIBLE.

29" x 29" I.D.  
GRATE FRAME

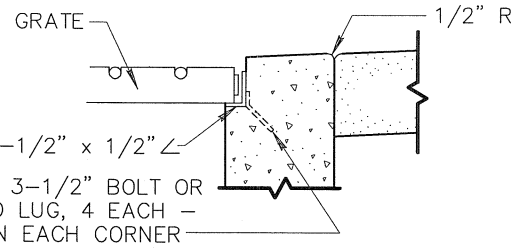


PLAN

SINGLE GRATE

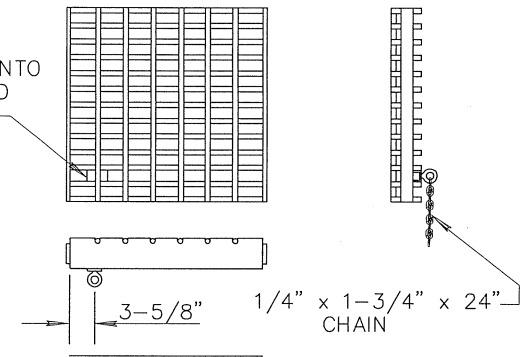
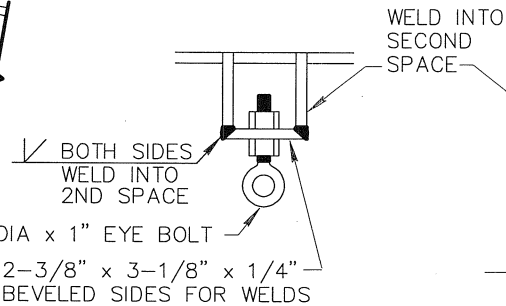


SECTION B-B



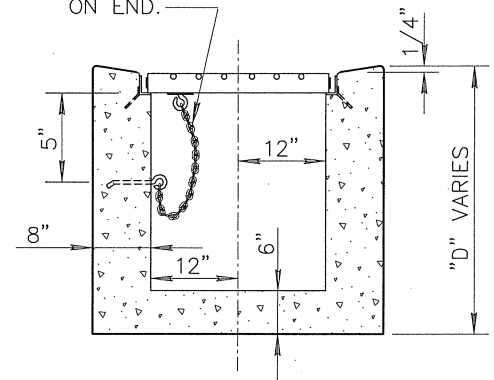
DETAIL OF ANGLE FRAME  
GRATE SUPPORT

ALL CONCRETE SHALL BE  
CLASS 'A' PER SECT. 725.  
EXPOSED EDGES SHALL BE  
FINISHED WITH A 1/2"  
RADIUS.



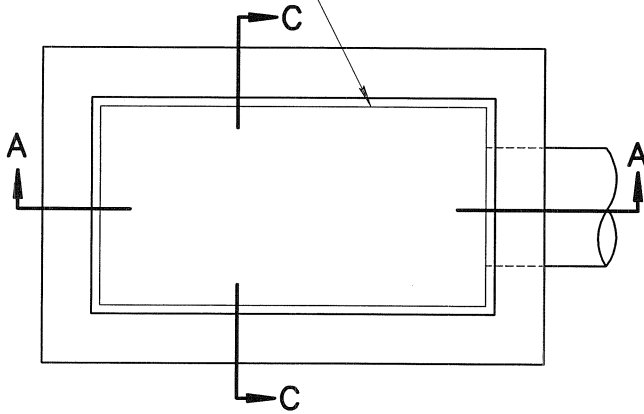
BAR GRATE  
SEE DETAIL 539

1/4" x 1-3/4" x 24" CHAIN TO 1" x 6"  
EYE BOLT IN WALL. BEND BOLT 1"  
ON END.



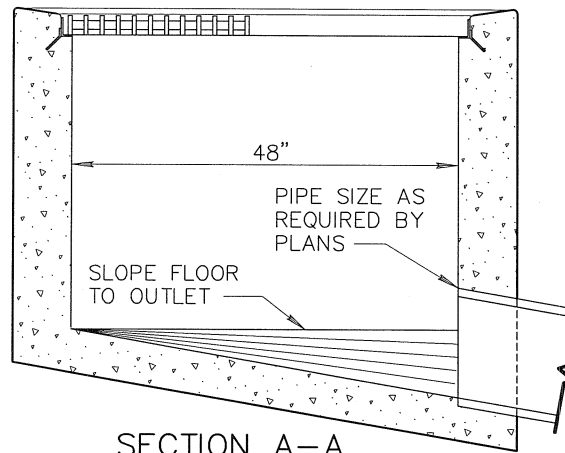
SECTION C-C

29" x 53" I.D.  
GRATE FRAME



PLAN

DOUBLE GRATE



SECTION A-A

DETAIL NO.

537



STANDARD DETAIL  
ENGLISH

CATCH BASIN - TYPE 'G'

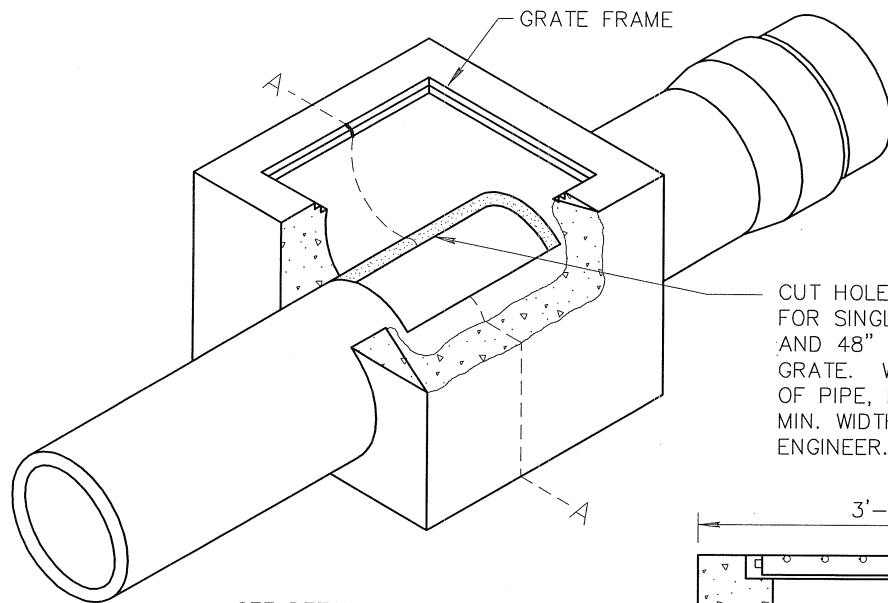
REVISED

01-03-2002

DETAIL NO.

537





WHEN DOUBLE GRATE IS USED  
INCREASE THE LENGTH OF THE  
STRUCTURE ACCORDINGLY.

CUT HOLE IN PIPE 24" LONG  
FOR SINGLE GRATE STRUCTURES  
AND 48" LONG FOR DOUBLE  
GRATE. WIDTH DEPENDS ON DIA.  
OF PIPE, NOT TO EXCEED 22"  
MIN. WIDTH TO BE SET BY PROJECT  
ENGINEER.

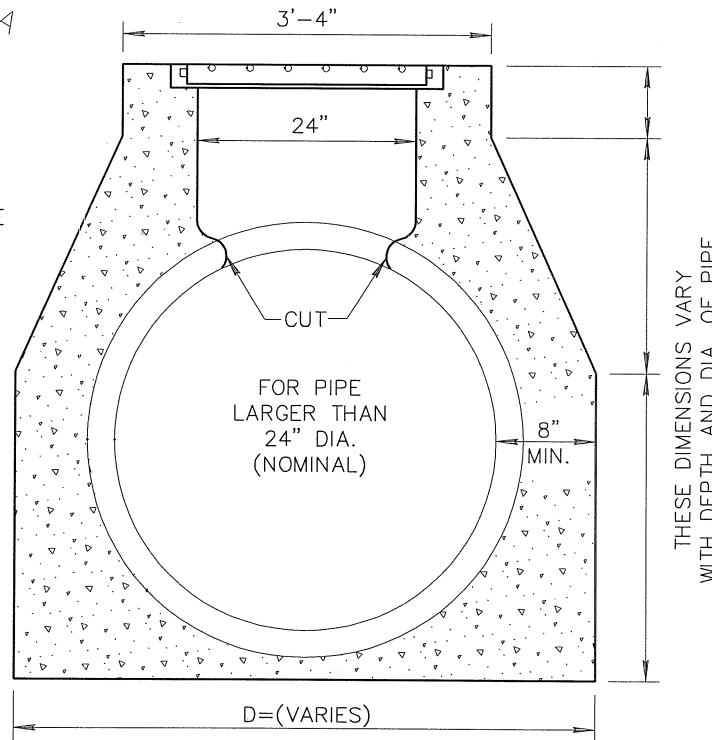
SEE DETAIL 539 FOR GRATE

29" x 29" I.D. SINGLE FRAME  
29" x 53" I.D. DOUBLE FRAME

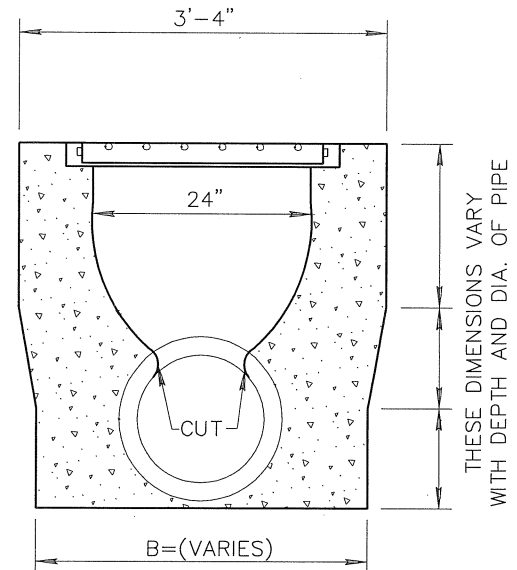
3" x 2-1/2"x  
1/2" ANGLE  
IRON FRAME

1/2" DIA x 6"  
LUGS WELDED  
TO FRAME, 4  
EACH - 1 ON  
EACH CORNER  
OF FRAME

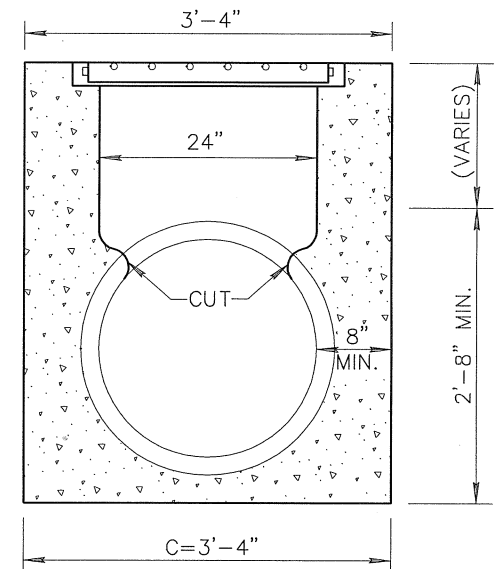
DETAIL OF ANGLE  
FRAME GRATE SUPPORT



SECTION A-A



SECTION A-A



SECTION A-A  
24" PIPE (NOMINAL)

DETAIL NO.

538



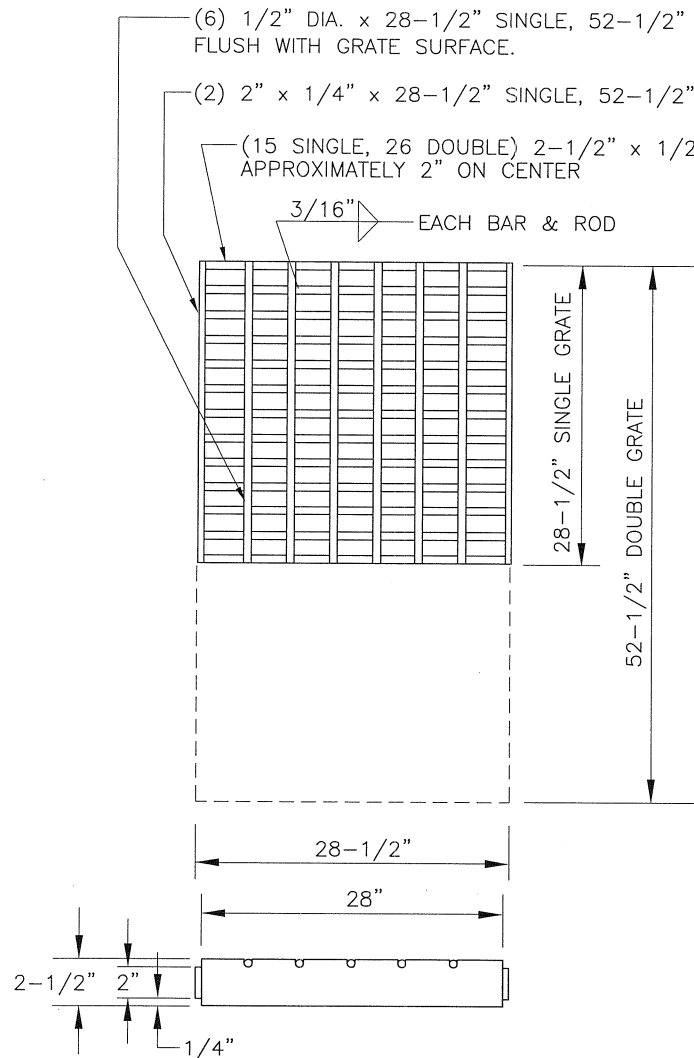
STANDARD DETAIL  
ENGLISH

CATCH BASIN - TYPE 'H'

REVISIONS

DETAIL NO.

538



### NOTES:

1. ALL STEEL SHALL BE IN ACCORDANCE WITH A.S.T.M. A-36.
2. WELDING SHALL BE IN ACCORDANCE WITH A.W.S. SPECIFICATIONS.
3. FRAME AND GRATE SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY.
4. THE COMPLETED ASSEMBLY SHALL BE GIVEN ONE SHOP COAT OF NO. 1 PAINT AND TWO FIELD COATS OF NO. 10 PAINT AS PER SECTION 790.
5. THE GRATE SHALL BE FABRICATED TO WITHIN 1/8" SPECIFIED DIMENSIONS.

DETAIL NO.

539



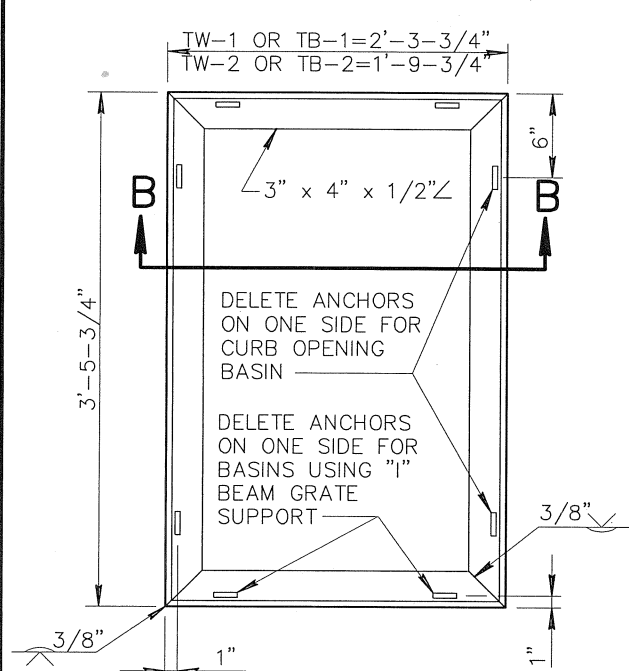
STANDARD DETAIL  
ENGLISH

GRATES FOR CATCH BASINS,  
TYPE G AND H

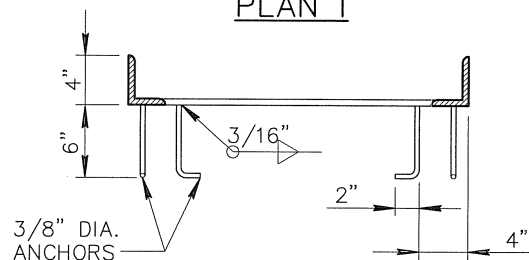
REVISED

DETAIL NO.

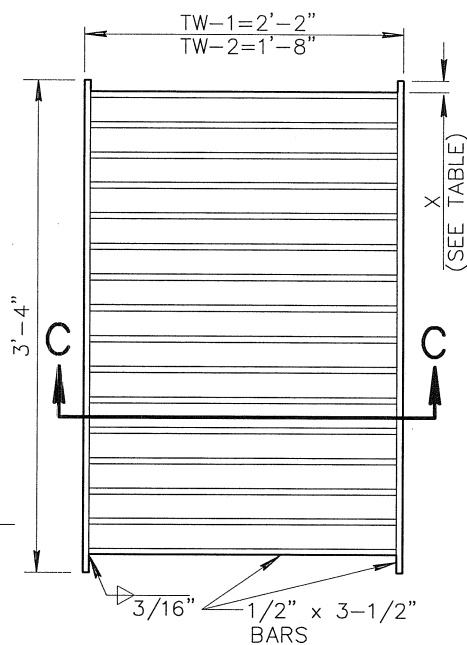
539



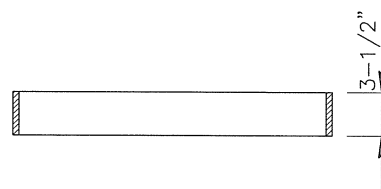
PLAN I



SECTION B-B

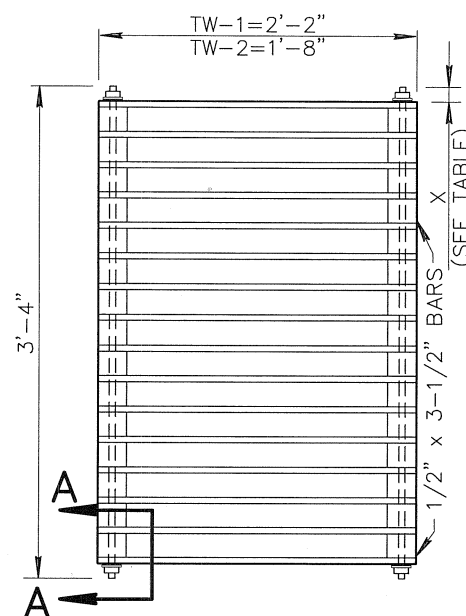


PLAN IA

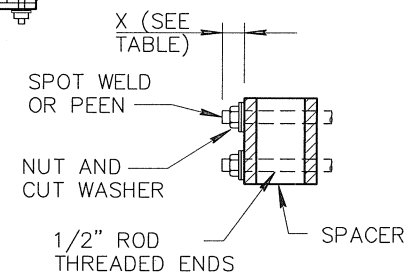
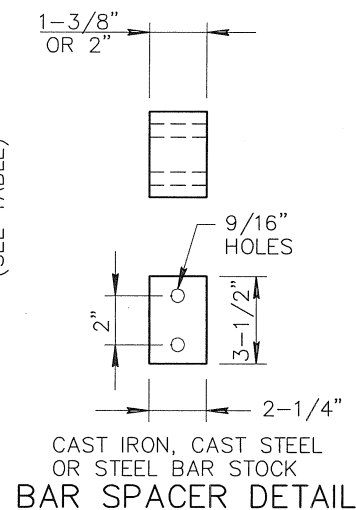


SECTION C-C

GRATE TYPES TW-1 AND TW-2



PLAN IB



SECTION A-A

GRATE TYPES TB-1 AND TB-2

NOTES:

1. GRATING UNITS AND FRAMES SHALL BE FABRICATED FROM STRUCTURAL STEEL EXCEPT AS NOTED.
2. WELDING SHALL BE IN ACCORDANCE WITH STD. WELDING SPECS.
3. THE COMPLETED ASSEMBLY SHALL BE GIVEN TWO SHOP COATS OF NO. 1 PAINT AS PER SECT. 790.
4. FRAME AND GRATE SHALL FIT TO A MAX. ROCK OF 0.093" AT ANY POINT.
5. RESTRICT USE TO GRADES OF 3% OR LESS.

BAR TABLE

TYPE	CLEAR SPACING	NO. BARS	X	GRATE OPENING ft <sup>2</sup>
TW OR TB-1.0	1"	26	1"	3.21
TW OR TB-1.1	1-3/8"	21	1"	3.32
TW OR TB-1.2	2"	16	1"	4.66
TW OR TB-2.0	1"	26	1"	2.32
TW OR TB-2.1	1-3/8"	21	1"	2.41
TW OR TB-2.2	2"	16	1"	2.65

TW INDICATES TRANSVERSE WELDED  
TB INDICATES TRANSVERSE BOLTED

DETAIL NO.

540-1



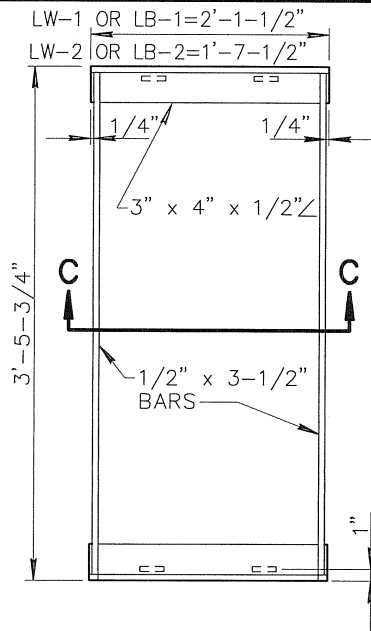
STANDARD DETAIL  
ENGLISH

CATCH BASIN GRATES

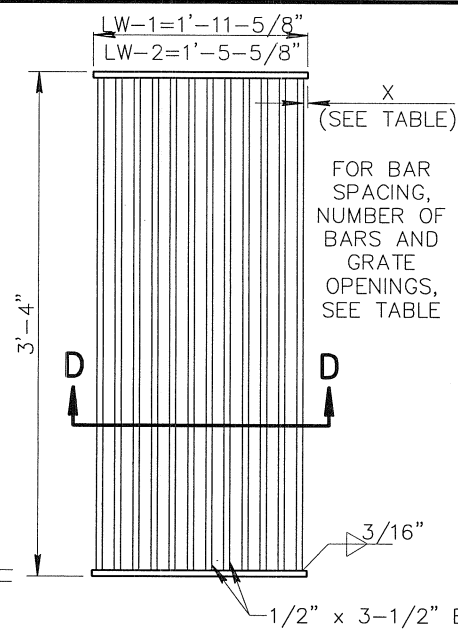
REVISED

DETAIL NO.

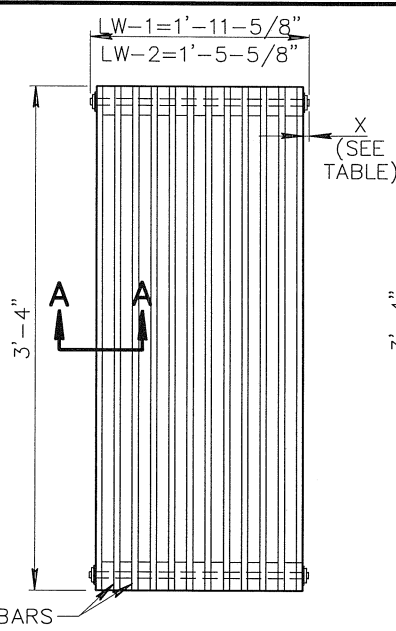
540-1



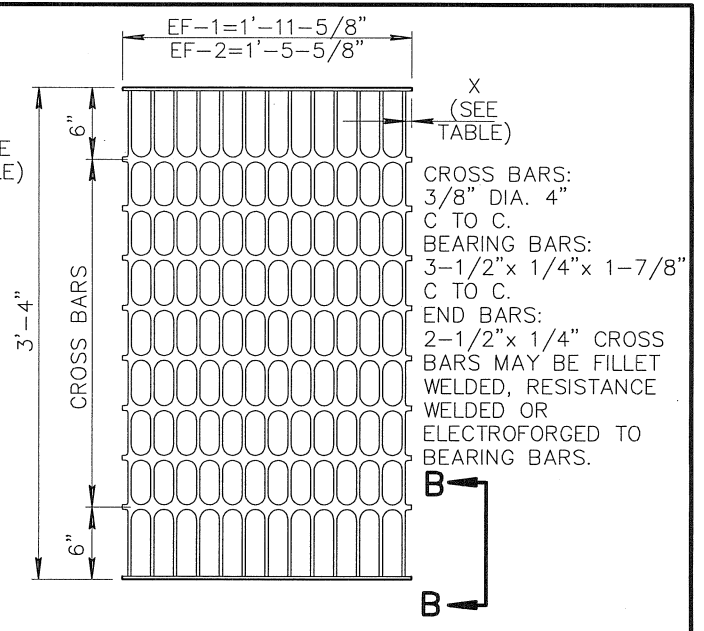
PLAN II



PLAN IIA

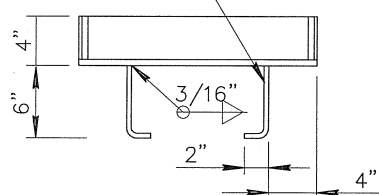


PLAN IIB

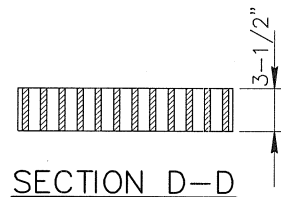


PLAN II

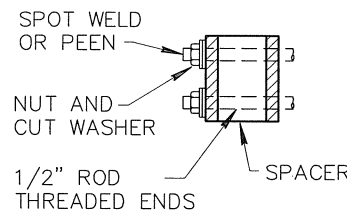
3/8" ANCHOR  
DELETE ON END  
WHEN USED WITH  
I BEAM SUPPORT



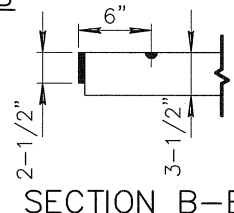
SECTION C-C



SECTION D-D



SECTION A-A

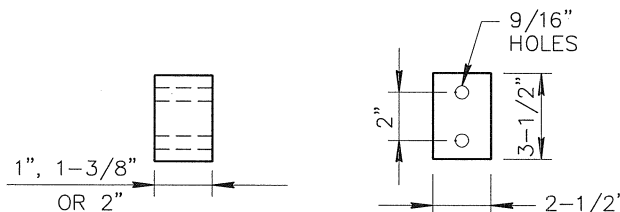


SECTION B-B

### NOTES:

1. LW INDICATES LONGITUDINAL WELDED.
2. LB INDICATES LONGITUDINAL BOLTED.
3. EF INDICATES ELECTROFORGED.
4. GRATING UNITS AND FRAMES SHALL BE FABRICATED FROM STRUCTURAL STEEL 'A-36 EXCEPT AS NOTED.
5. ALL WELDING SHALL BE IN ACCORDANCE WITH STANDARD WELDING SPECIFICATIONS.
6. THE COMPLETED ASSEMBLY SHALL BE GIVEN ONE SHOP COAT OF NO. 1 PAINT.
7. FRAMES AND GRATES SHALL FIT TO A MAXIMUM ROCK OF 0.093" AT ANY POINT.
8. GRATE TYPE LW AND EF RESTRICTED TO SLOPES OF 3% OR LESS
9. GRATES TYPE LB USE LONGITUDINAL GRADES IN EXCESS OF 3% OR AS AN ALTERNATE TO TYPES LW OR EF ON GRADES OF 3% OR LESS.

GRATE TYPE	CLEAR BAR SPACING	NO. BARS	X	GRATE OPENING ft <sup>2</sup>
LW OR LB-1.0	1"	16	5/16"	3.97
LW OR LB-1.1	1-3/8"	13	5/16"	4.34
LW OR LB-1.2	2"	9	1-9/16"	4.84
EF-1	1-5/8"	13	7/16"	4.66
LW OR LB-2.0	1"	12	5/16"	2.98
LW OR LB-2.1	1-3/8"	9	1-1/16"	3.35
LW OR LB-2.2	2"	7	1-1/16"	3.60
EF-2	1-5/16"	10	1/4"	3.48



BAR SPACER DETAIL

CAST IRON, CAST STEEL  
OR STEEL BAR STOCK

DETAIL NO.

540-2



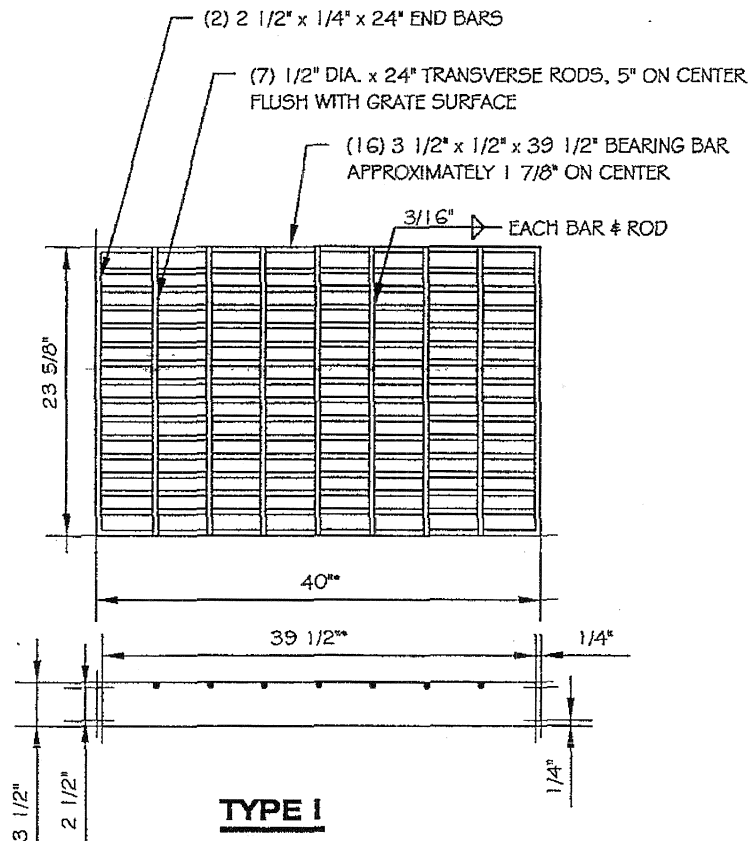
STANDARD DETAIL  
ENGLISH

CATCH BASIN GRATES

REVISED

DETAIL NO.

540-2



\* DIMENSION WILL VARY DEPENDING UPON  
CATCH BASIN PIPE SIZE.

**NOTES:**

1. ALL STEEL SHALL BE IN ACCORDANCE WITH ASTM A-36.
2. WELDING SHALL BE IN ACCORDANCE WITH AWS SPECIFICATIONS.
3. FRAME AND GRATE SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY.
4. THE COMPLETED ASSEMBLY SHALL BE GIVEN ONE SHOP COAT OF NO. 1 PAINT AND TWO FIELD COATS OF NO. 10 PAINT AS PER MAG SECTION 790.
5. THE GRATE SHALL BE FABRICATED TO WITHIN 1/8" OF SPECIFIED DIMENSIONS.

DETAIL NO.  
**C-506**  
NTS



CITY OF  
CHANDLER  
STANDARD  
DETAIL

**CATCH BASIN GRATES**

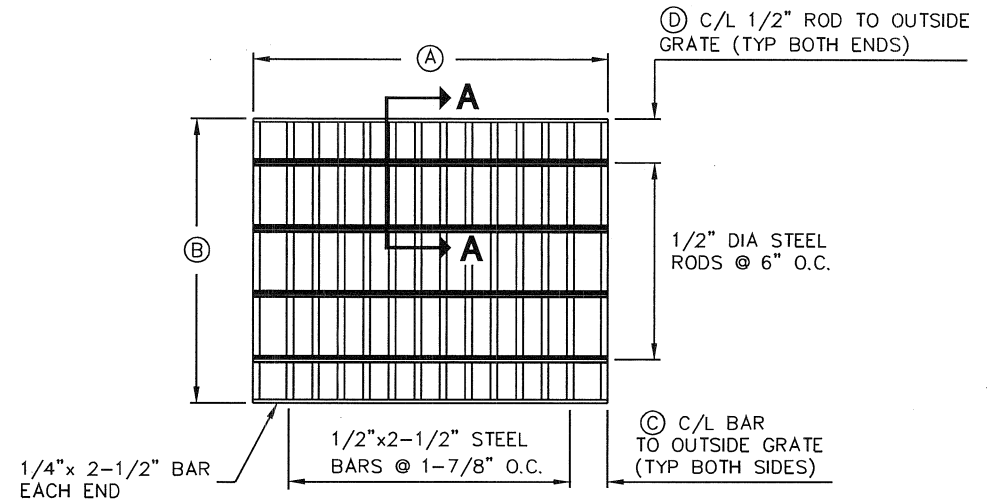
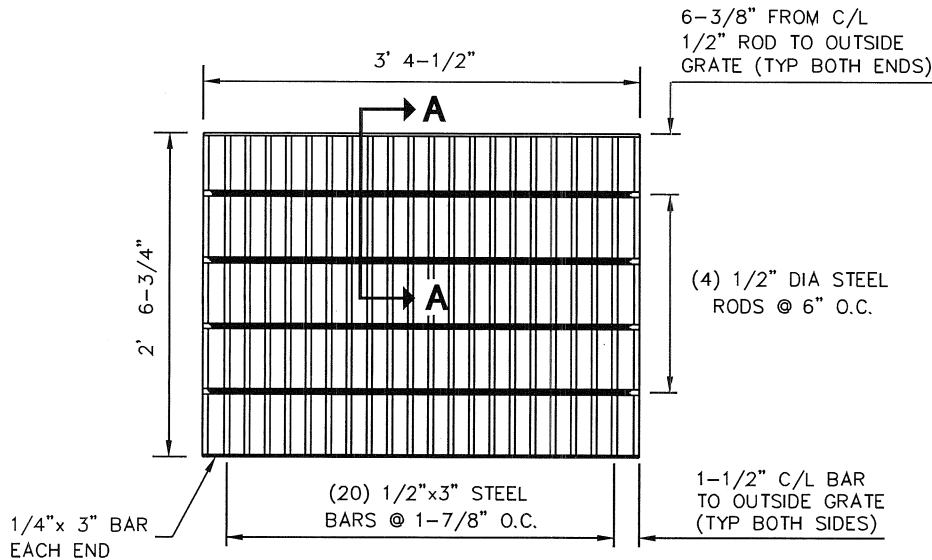
APPROVED:

*Ray A. Feltman*  
CITY ENGINEER

DATE: 11-19-99

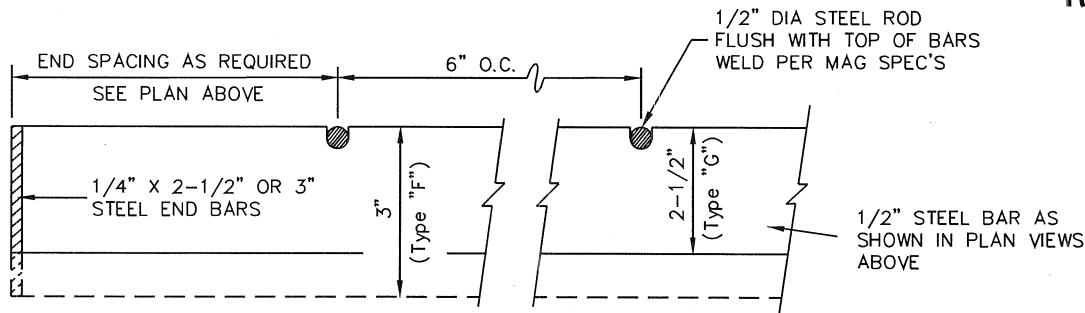
DETAIL NO.

**C-506**  
NTS



**GRATE FOR TYPE 'F' CATCH BASIN**  
REPLACES GRATE SHOWN IN MAG DETAIL NO 535

**GRATE FOR TYPE 'G' CATCH BASIN**  
REPLACES GRATE SHOWN IN MAG DETAIL 537



**SECTION A-A**

**NOTES:**

1. ALL MATERIALS AND FABRICATION TO BE AS SPECIFIED IN MAG STANDARD DETAIL NO. 540-2

TYPE "G" GRATE DIMENSIONS		
	SINGLE GRATE	DOUBLE GRATE
①	2'-2"	4'-3 1/2"
②	2'-2"	2'-2"
③	2'-11/16"	2'-5/16"
④	0'-4"	0'-3 3/4"

DETAIL NO.  
**2535**

**City of Scottsdale**  
Standard Details

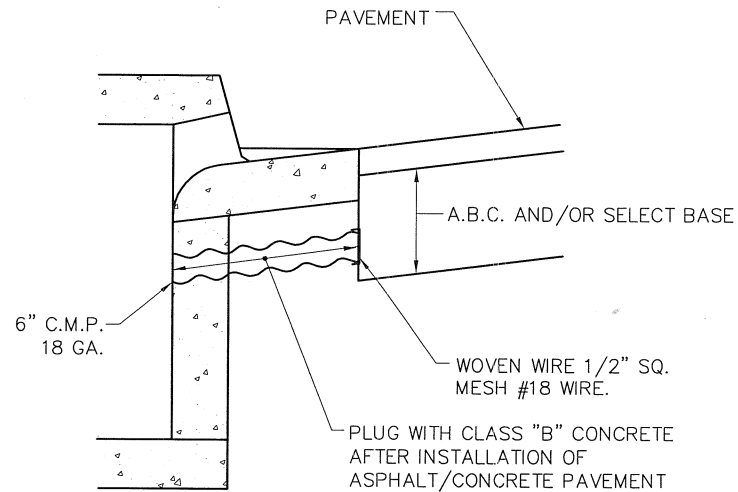
APPROVED BY:  
**Scottsdale Standards & Specifications Committee**

**CATCH BASIN GRATES**

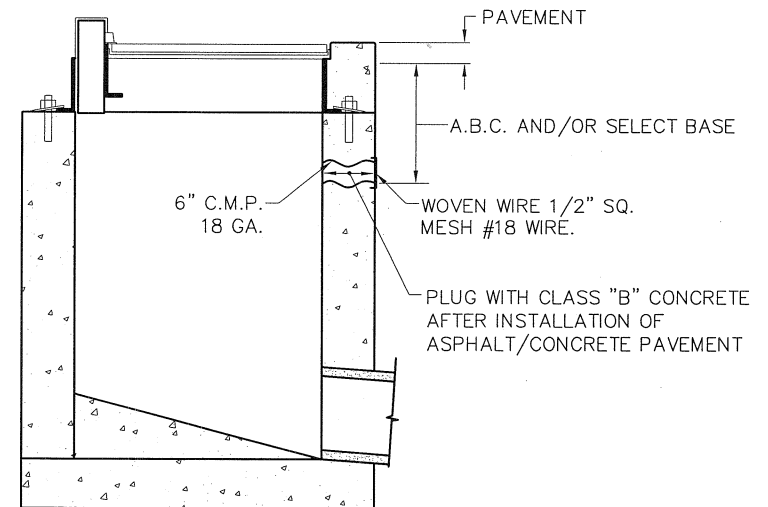
DETAIL NO.  
**2535**

NOTES:

1. INSTALL WHEN REQUIRED BY PLANS, SPECIFICATIONS, OR APPROVED BY THE ENGINEER.
2. SEE PROJECT PLANS FOR CATCH BASIN DETAILS AND PAVEMENT STRUCTURAL SECTION.



CURB OPENING INLET



GRATE OPENING INLET

DETAIL NO.

541



**STANDARD DETAIL  
ENGLISH**

**CATCH BASIN SUBGRADE DRAIN**

REVISED

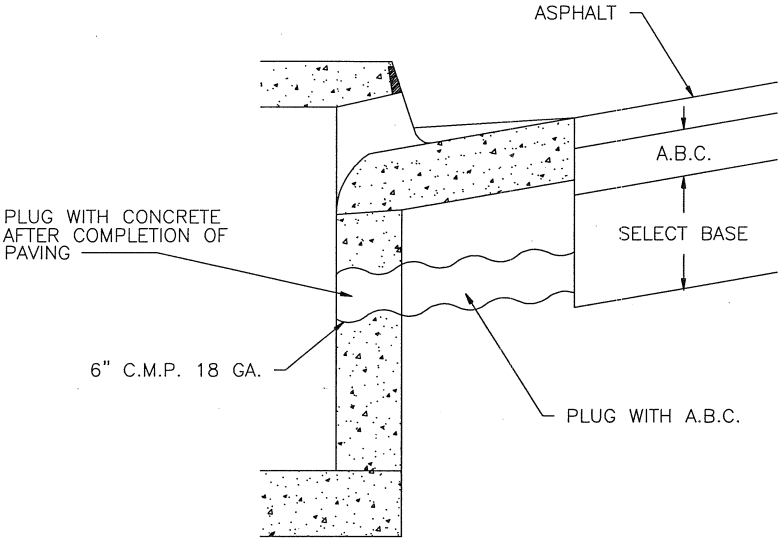
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DETAIL NO.

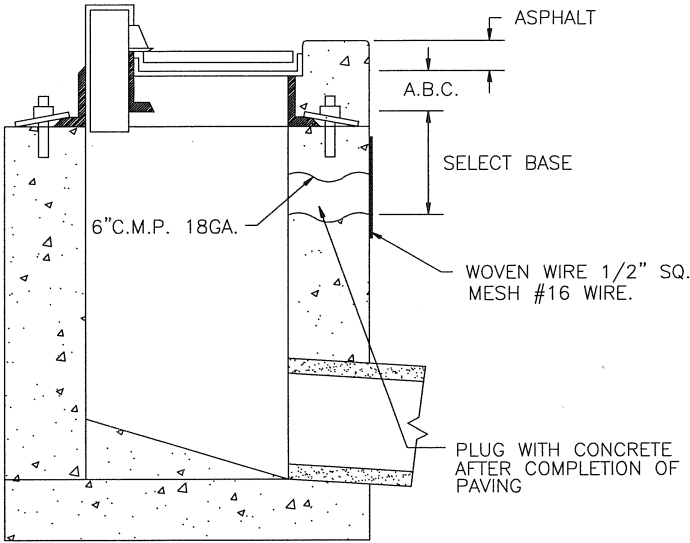
541

NOTES:

- 1. CONSTRUCTION DRAINS TO BE INSTALLED IN ALL INLETS BUILT WITH PAVING PROJECTS.
- 2. SEE PROJECT PLANS FOR INLET DETAILS AND DEPTH OF PAVING.



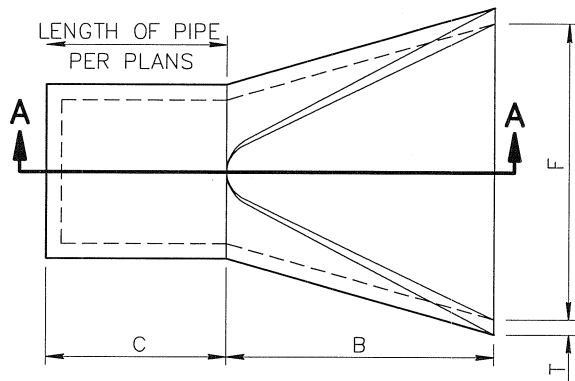
CURB OPENING INLET



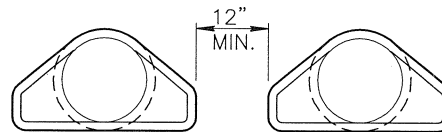
GRATE OPENING INLET



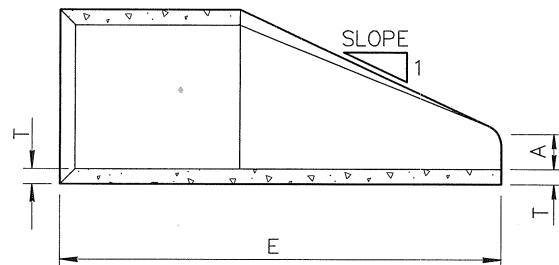
PIPE DIA.	APPROX. WEIGHT (LBS.)	DIMENSIONS — INCHES						APPROX. SLOPE
		T	A	B	C	E	F	
24"	1520	3	9-1/2	43-1/2	30	73-1/2	48	3
27"	1930	3-1/4	10-1/2	49-1/2	24	73-1/2	54	3
30"	2190	3-1/2	12	54	19-3/4	73-3/4	60	3
36"	4100	4	15	63	34-3/4	97-3/4	72	3
42"	5380	4-1/2	21	63	35	98	78	3
48"	6550	5	24	72	26	98	84	3
54"	8240	5-1/2	27	65	33-1/4	98-1/4"	90	2 1/2



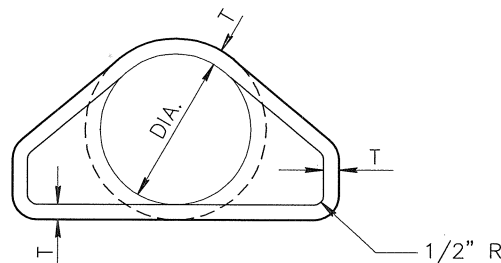
PLAN



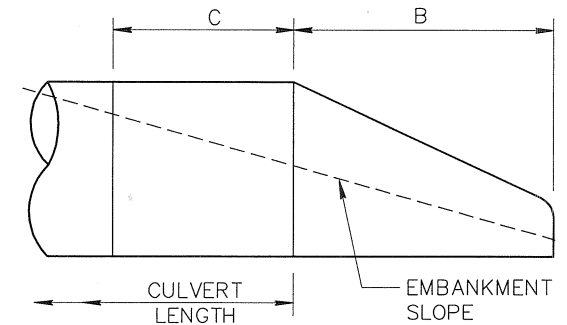
SPACING FOR MULTIPLE INSTALLATION



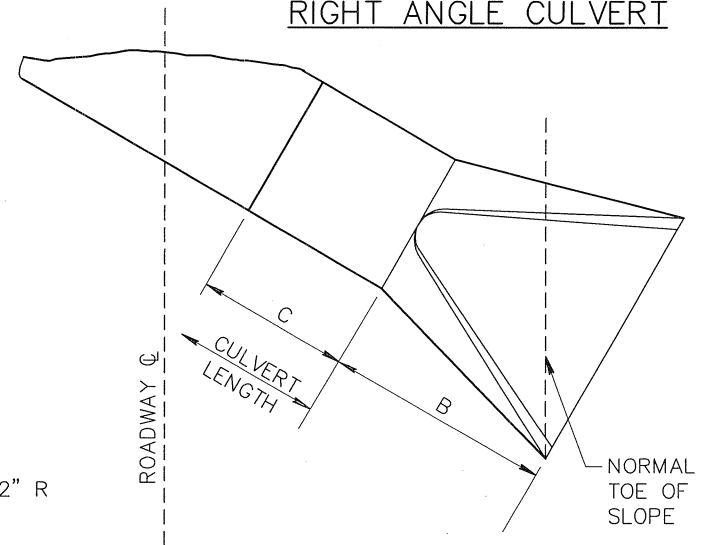
SECTION A-A



FRONT ELEVATION



RIGHT ANGLE CULVERT



SKewed CULVERT

## NOTES

1. DESIGN OF END SECTION SHALL CONFORM TO STANDARD FOR REINFORCED CONCRETE PIPE.
2. END SECTION JOINT CONFORMATION SHALL MATCH THE PIPE JOINTS.
3. EMBANKMENT SLOPE SHALL BE WARPED TO MATCH SLOPE OF END SECTION.
4. CULVERT LENGTH IS AS SHOWN ON PLANS.

DETAIL NO.

545



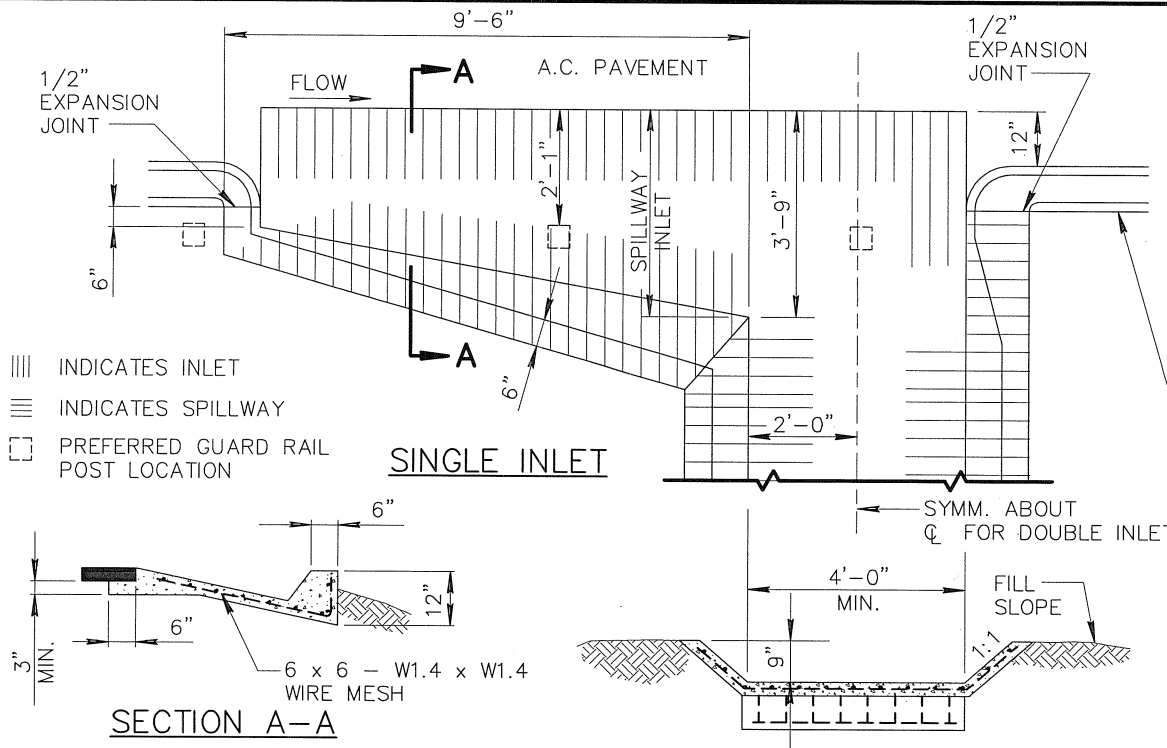
STANDARD DETAIL  
ENGLISH

END SECTION-REINFORCED CONCRETE PIPE

REVISED

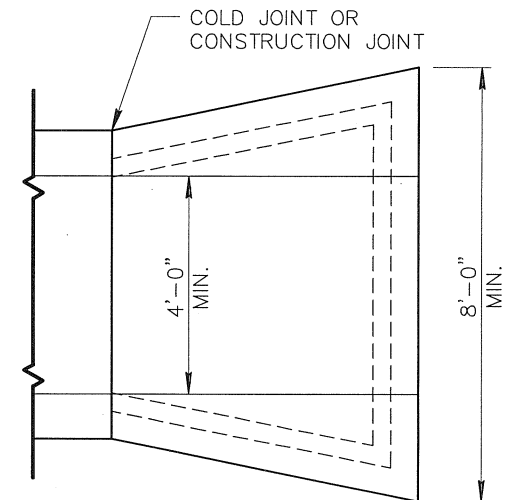
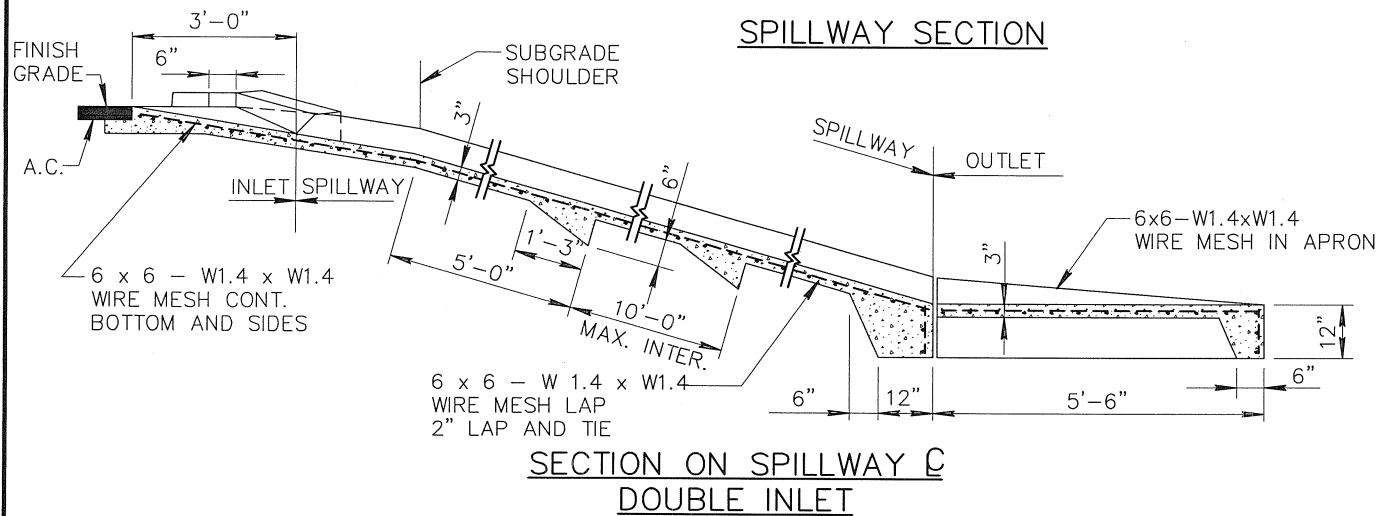
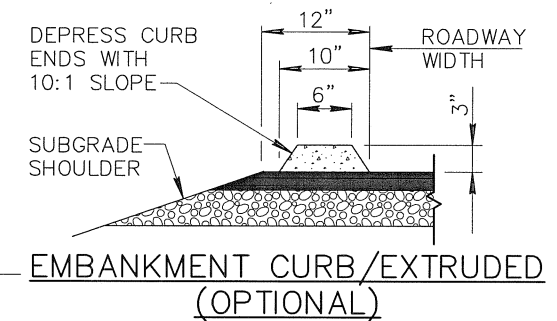
DETAIL NO.

545



### NOTES:

1. WHERE ROCK IS ENCOUNTERED THE OUTLET MAY BE OMITTED.
2. ALL PORTIONS OF SPILLWAY TO BE TROWEL FINISHED.
3. CONCRETE FOR THE SPILLWAY INLET, SPILLWAY AND OUTLET SHALL BE CLASS 'B' PER SECT. 725.
4. WHEN THE OUTLET IS USED, THE WIRE MESH SHALL EXTEND THROUGH THE JOINT INTO THE OUTLET IN LIEU OF BENDING INTO THE KEY.



DETAIL NO.

550



STANDARD DETAIL  
ENGLISH

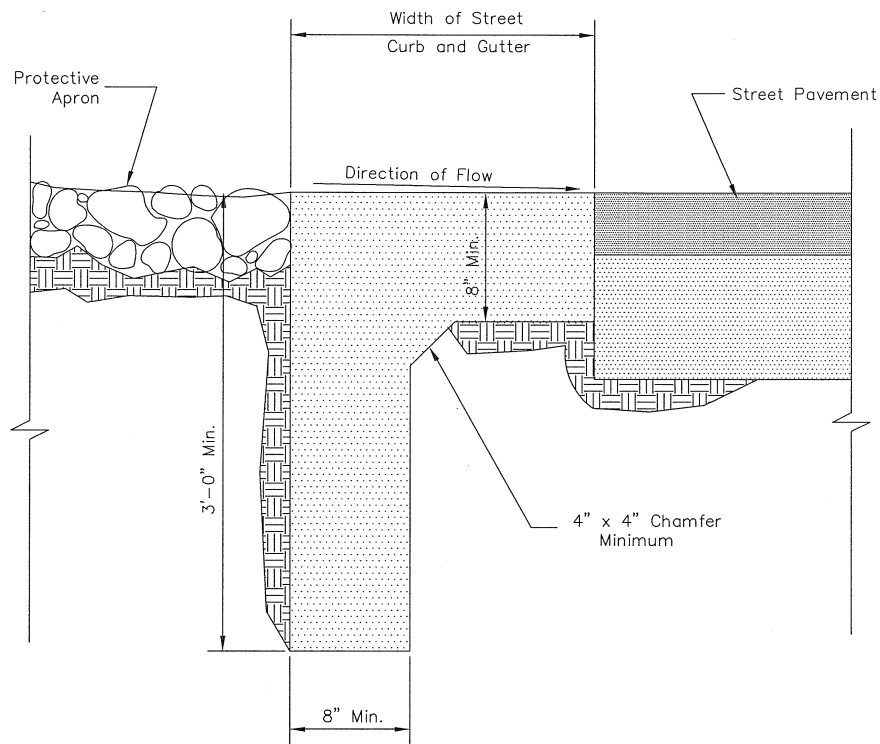
SPILLWAY INLET AND OUTLET

REVISED

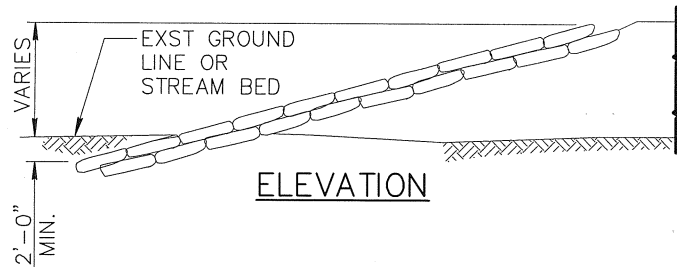
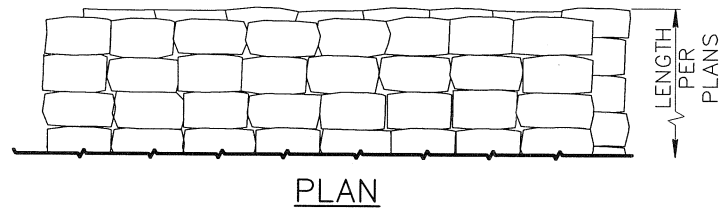
DETAIL NO.

550

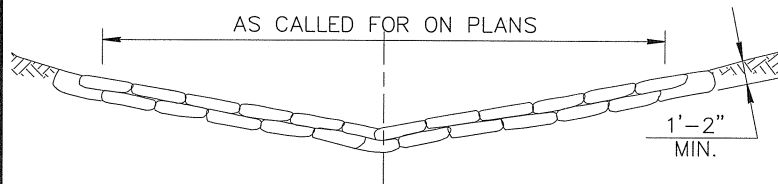
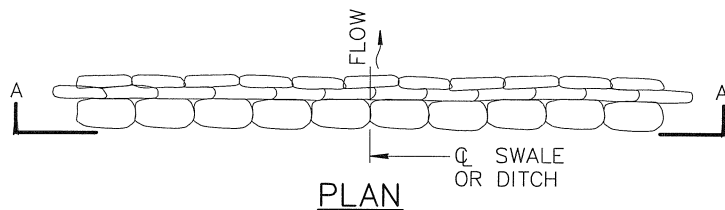




<p>DETAIL NO. G-3520</p>	<p>CITY OF GOODYEAR STANDARD DETAIL</p>	<p>APPROVED BY: Goodyear Standards and Policies Committee 7/97</p>	<p>CUT-OFF WALL</p>	<p>DETAIL NO. G-3520</p>
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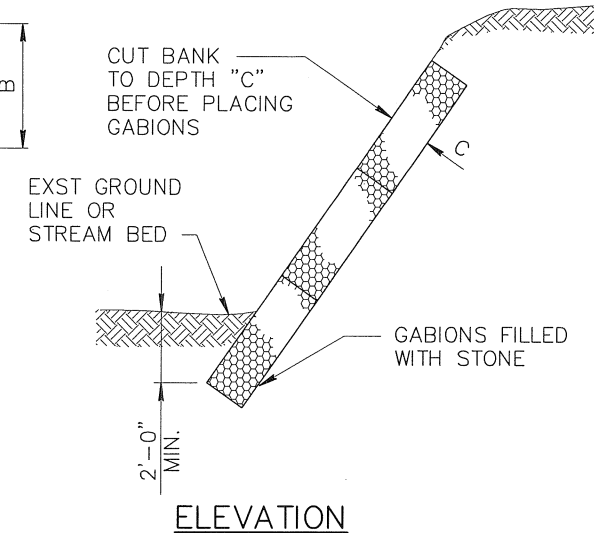
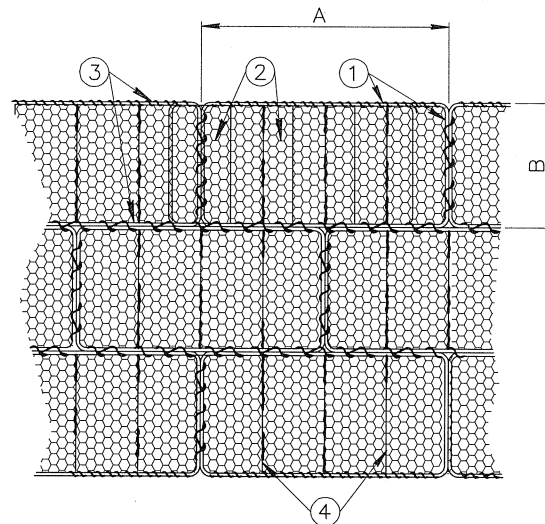


TYPE 1 RIPRAP



TYPE 2 RIPRAP

## TYPICAL GABIONS



- ① HEAVY GAUGE FRAME WIRE.
- ② HEAVY GAUGE TRIPLE-TWIST HEXAGONAL MESH (OR EQUAL) FASTENED TO FRAME WIRE.
- ③ CONTINUOUS HEAVY GAUGE WRAPPED AROUND FRAMES TO FASTEN GABIONS TO EACH OTHER.
- ④ PARTITIONS TO PREVENT SHIFTING, NORMALLY ONE PER 3' LENGTH. INSTALLED AT FACTORY.

NOMINAL SIZE COMBINATIONS				
LENGTH	WIDTH	DEPTH		
A	B	C		
6'	3'	1'	1.5'	3'
9'	3'	1'	1.5'	3'
12'	3'	1'	1.5'	3'

OTHER SIZES AVAILABLE FROM MANUFACTURER.

### NOTES:

1. PLAIN ROCK OR GROUTED ROCK MAY BE SUBSTITUTED FOR SACKED CONCRETE.
2. GROUT FOR RIPRAP MAY BE PNEUMATICALLY PLACED MORTAR.

DETAIL NO.

555



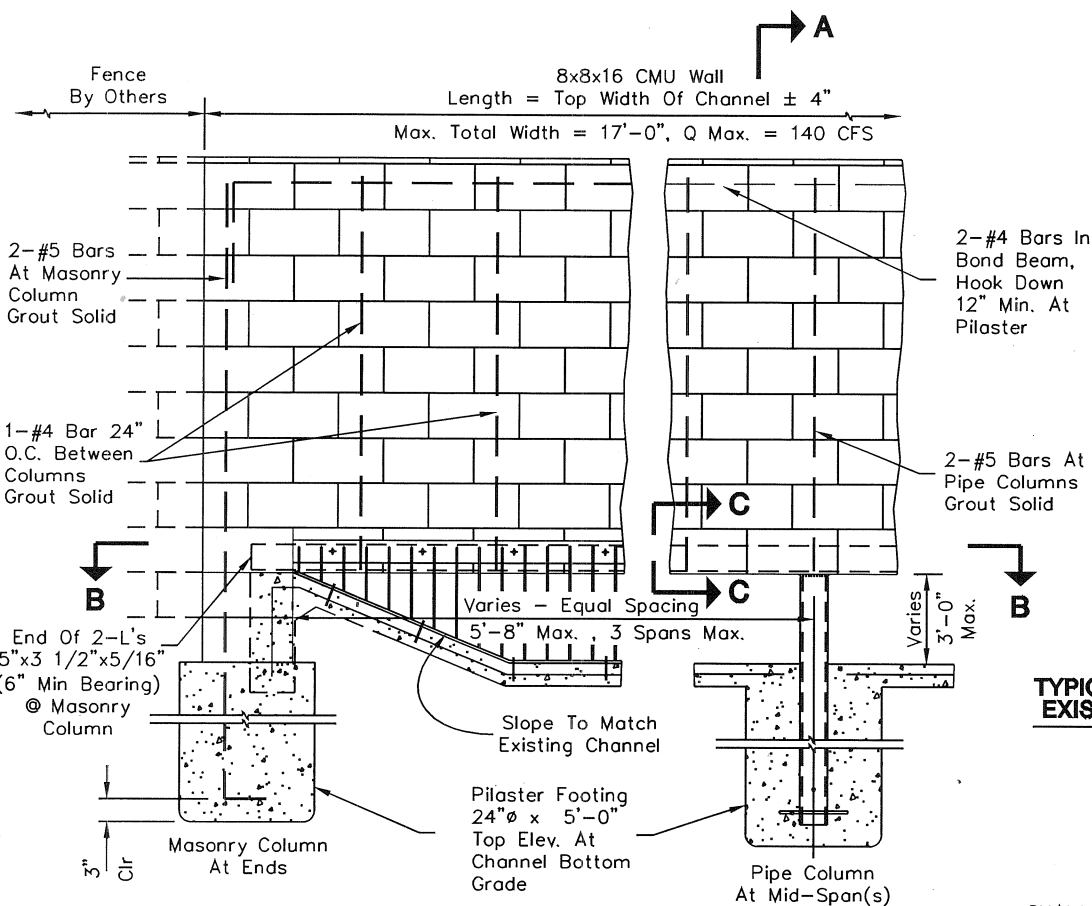
STANDARD DETAIL  
ENGLISH

EROSION PROTECTION / RIPRAP

REVISED

DETAIL NO.

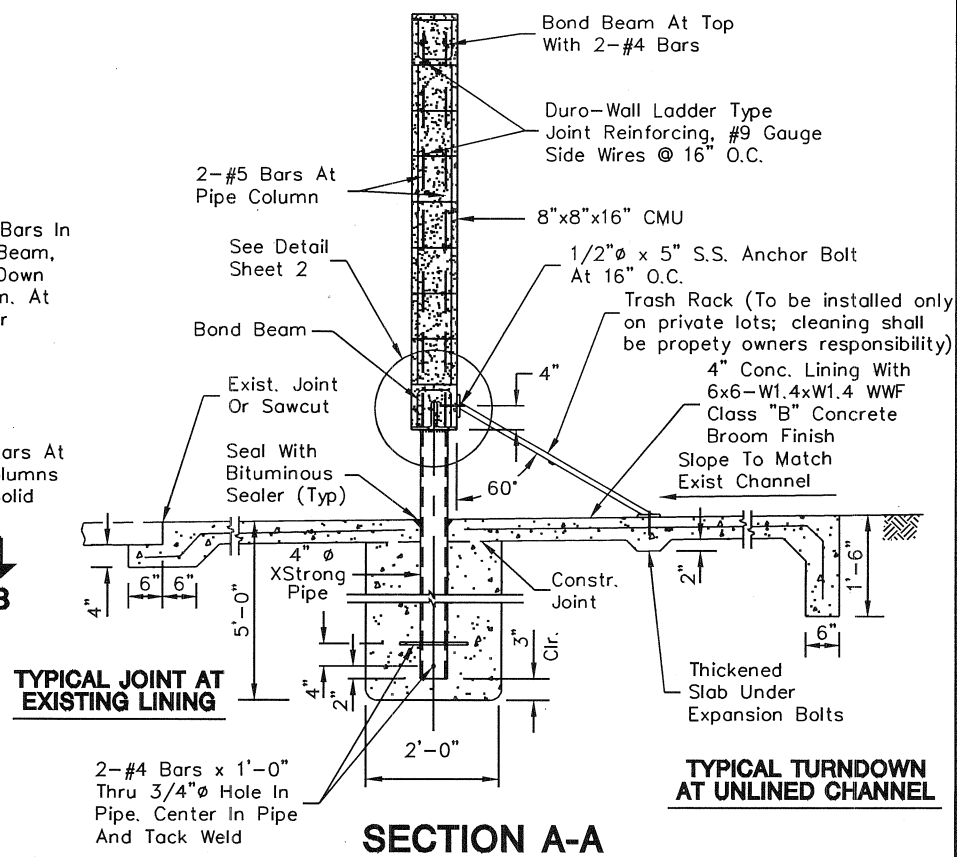
555



## ELEVATION

WALL NOTES:

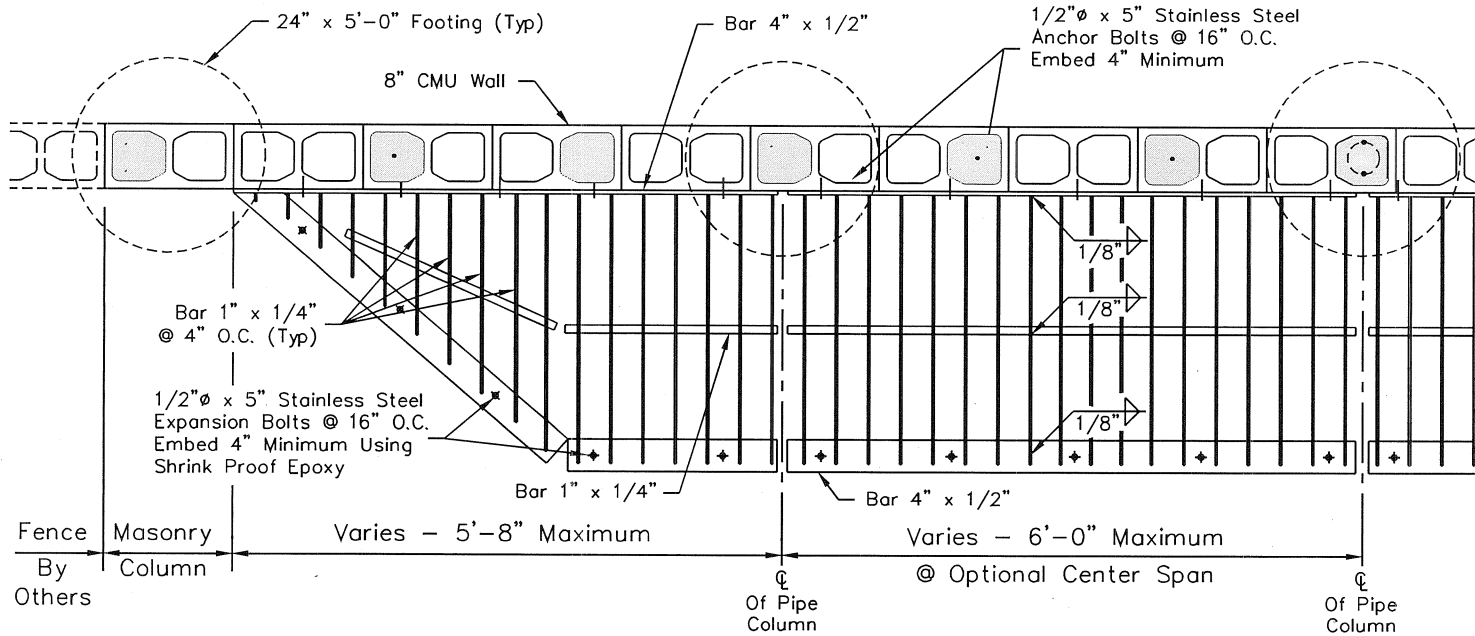
1. Wall Height, Finish Texture And Color to Match Adjacent Property Wall.
2. Construction To Conform to MAG Section 510.
3. Trash Rack Gate Required on Private Lots only; And Property Owner Shall Be Responsible for Cleaning.



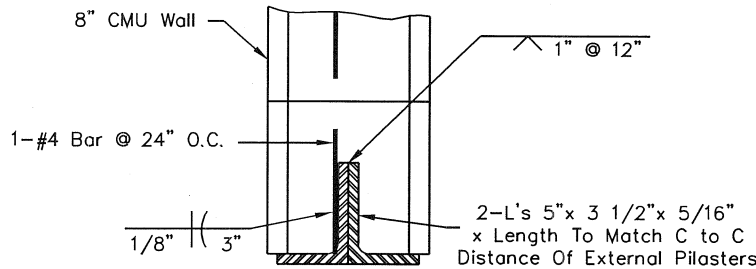
## CHANNEL NOTES:

UNLINED CHANNELS: Construct New Lining 6' Minimum Upstream And Downstream From Wall With Turndown At All Edges Of Lining.

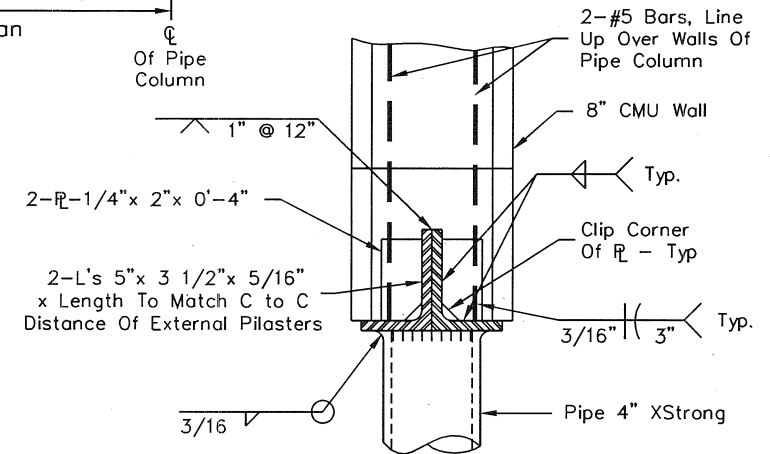
EXISTING LINED CHANNELS: Remove Existing Lining 4' Minimum Upstream And Downstream From Wall. Replace Using Joint Shown.



**SECTION B-B**



**SECTION C-C**



**DETAIL AT PIPE COLUMN**

**GRATE NOTES:**

1. Steel Work Shall Conform To Mag Sections 515 And 770.
2. Shop Drawings Are Not Required. Contractor Shall Be Responsible For Correct Fit Between The Trash Rack, Channel And Wall As Constructed In The Field.
3. Shop Prime Steel And Touch-Up Per MAG Section 515.5. Apply A Second Coat After Erection And A Finish Coat Of Alkyd Enamel To Match Wall Finish Color.
4. Grate Required on Private Lots Only. Property Owner Responsible for Cleaning.

DETAIL NO.

2515-2

**City of Scottsdale  
Standard Details**

APPROVED BY:

**Scottsdale Standards &  
Specifications Committee**

**DRAINAGE GRATE AT BLOCK WALL**

SHEET 2 OF 2

DETAIL NO.

2515-2

Top Stone: Loose Naturally Placed Native Stone. D <sub>50</sub> = 8" (Size: 3" Min. - 12" Max.)	<u>Note:</u> Stone shall be fractured with angular faces; no river run	Bed Stone: Hand Placed Native Stone D <sub>50</sub> = 15" (Size: 12" Min. - 18" Max.)
--	---	--

Note: Stone shall be fractured with angular faces; no river run

Bed Stone:  
Hand Placed Native Stone  
D<sub>50</sub> = 15" (Size: 12" Min. -  
18" Max.)

2" Min. Native  
Bed Material

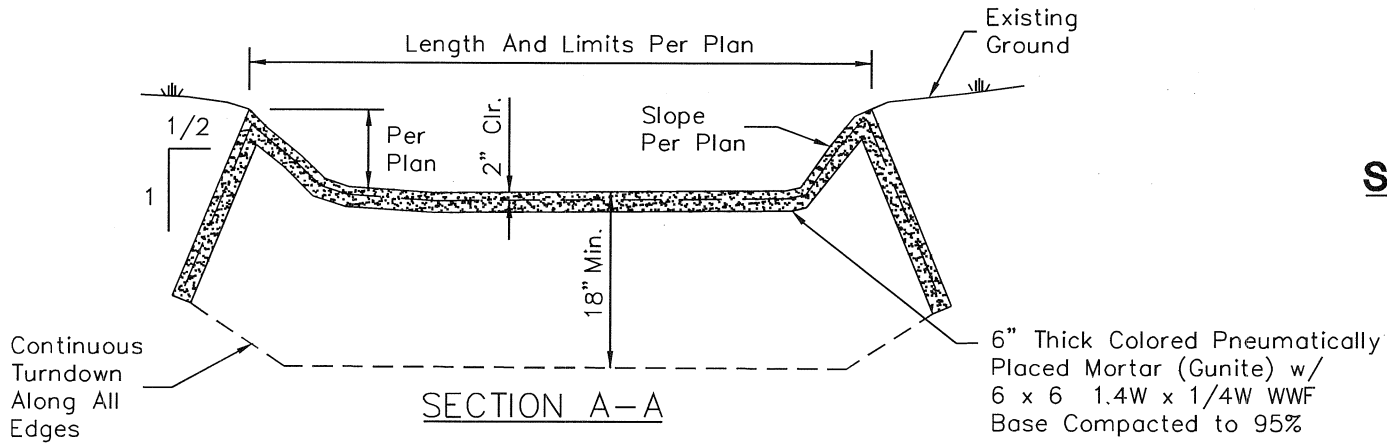
Min. Slope 0.5%

4" Min.  
(Embed)

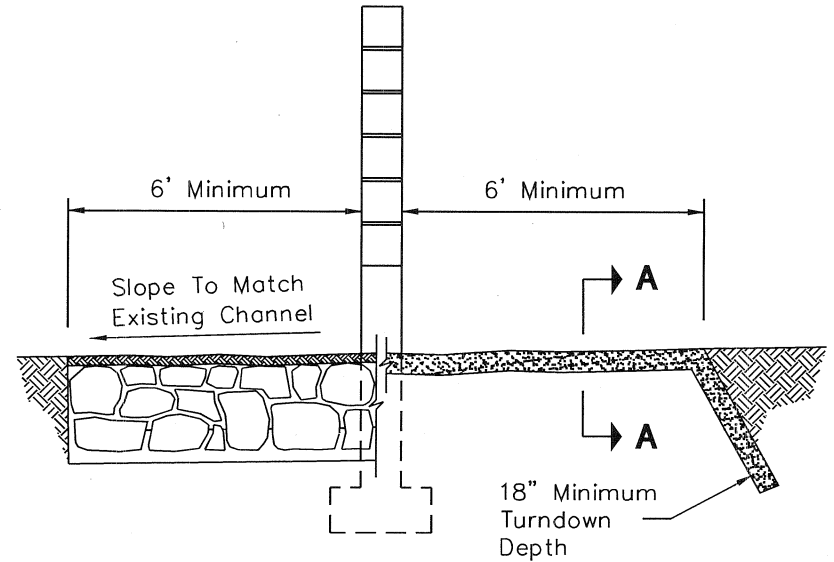
Min. Conc.

Integrally Colored Concrete Or  
Grout, Color To Be Determined By  
Plans or City Of Scottdale Inspector  
(Color to match native stone)

### **TYPE 1 - BURIED GROUTED RIP-RAP DETAIL**



### TYPE 2- PNEUMATICALLY PLACED MOTAR DETAIL



### SECTION AT WALL

DETAIL NO.  
**2515-3**

## City of Scottsdale Standard Details

APPROVED BY:  
**Scottsdale Standards & Specifications Committee**

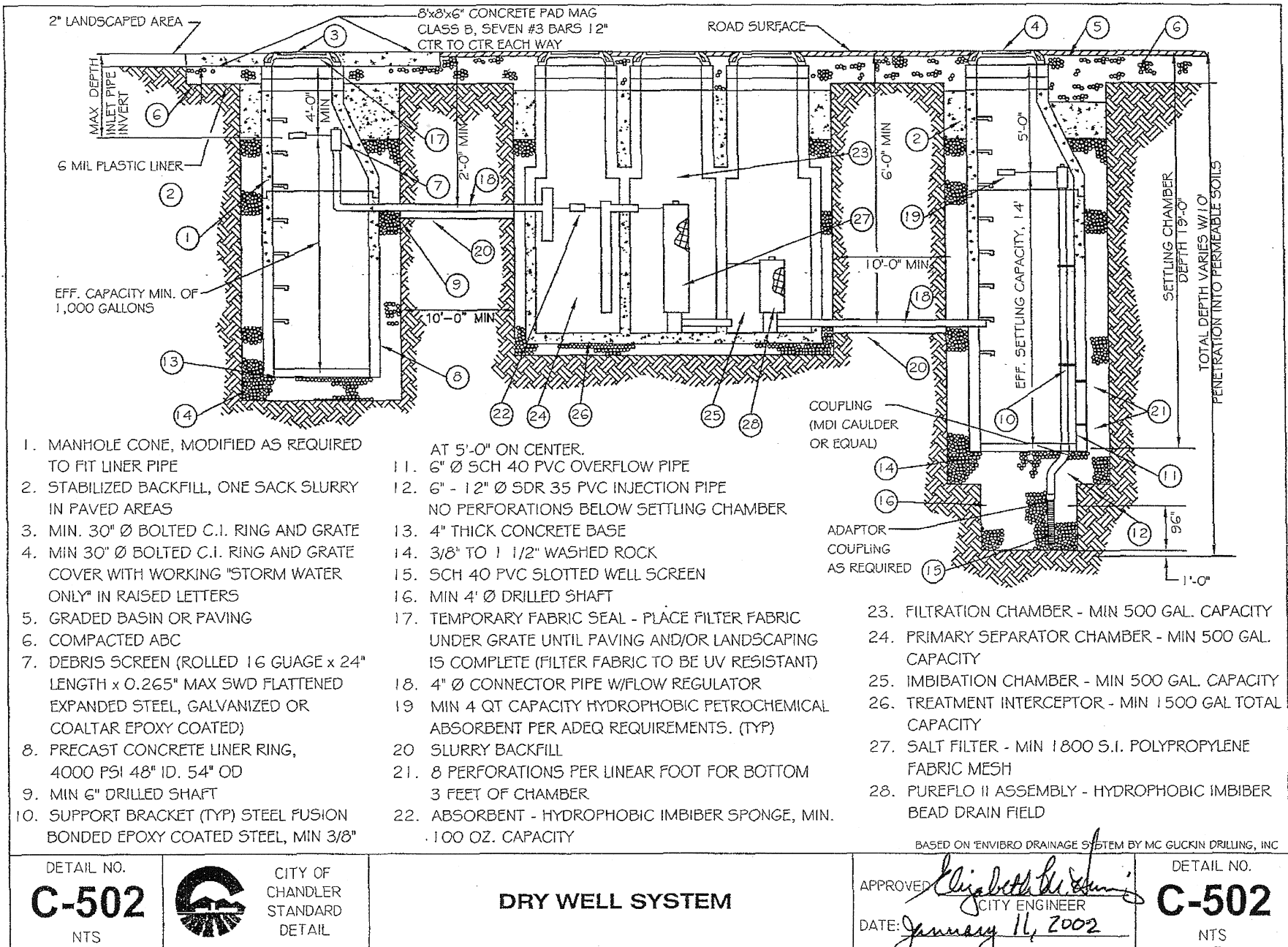
## WALL OPENING EROSION PROTECTION

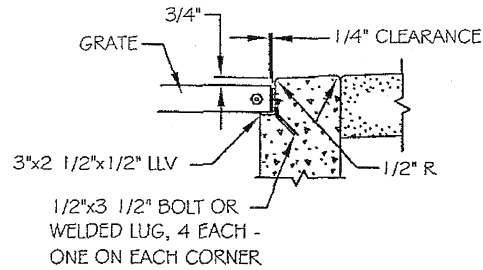
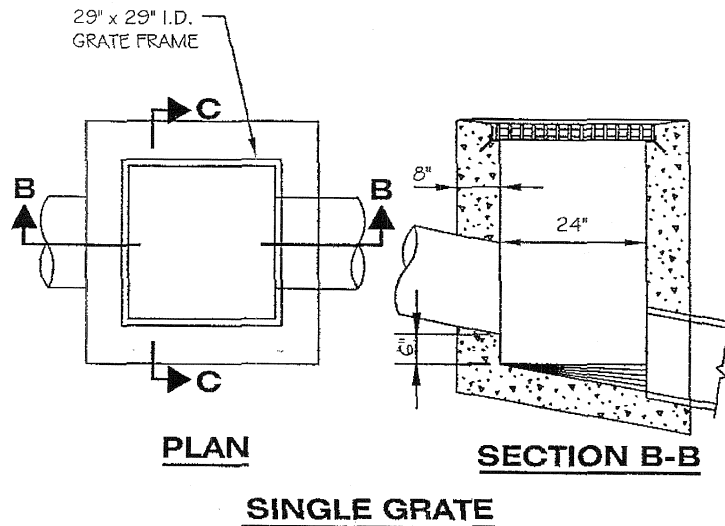
DETAIL NO.  
**2515-3**



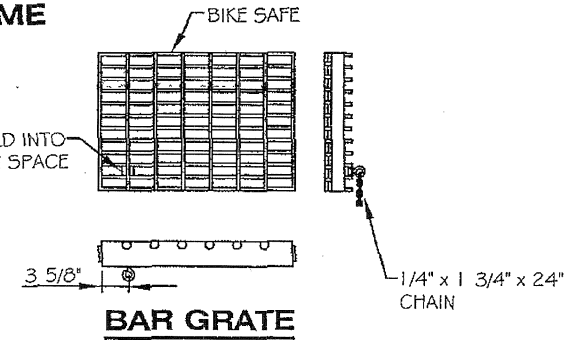
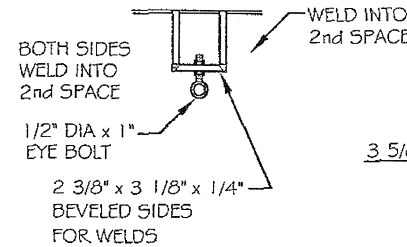


**C-501**  
NTS

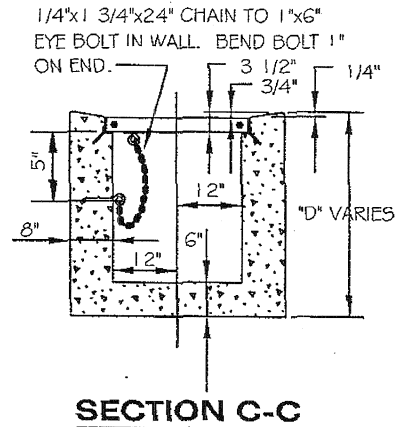
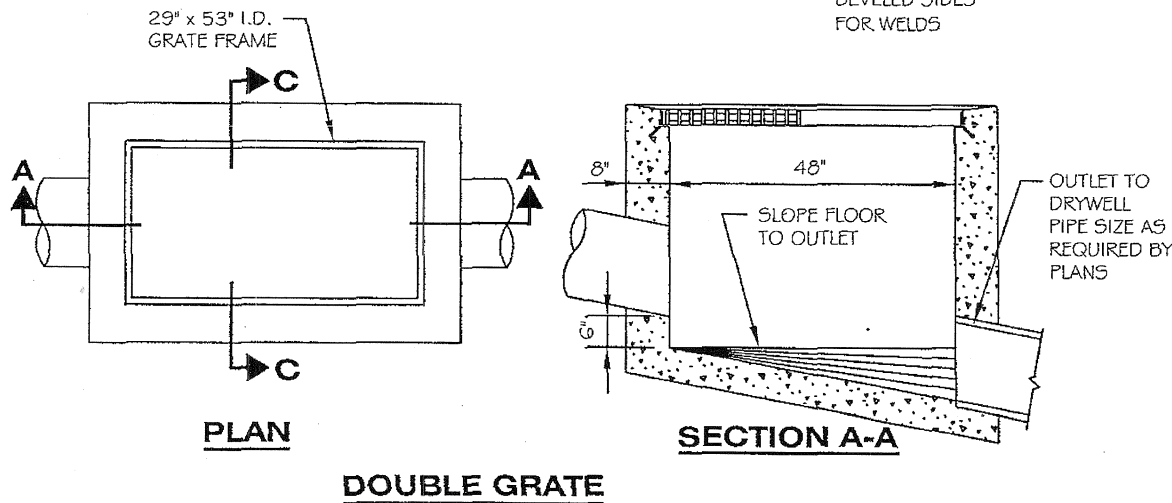




**DETAIL OF ANGLE FRAME  
GRATE SUPPORT**



ALL CONCRETE SHALL BE  
CLASS 'A' PER MAG SECT.  
725. EXPOSED EDGES SHALL  
BE FINISHED WITH A 1/2" RADIUS.  
REINFORCE WITH #4 AT 8"  
EACH WAY, CENTERED.



DETAIL NO.

**C-504**

NTS



CITY OF  
CHANDLER  
STANDARD  
DETAIL

**RETENTION BASIN INLET**

APPROVED

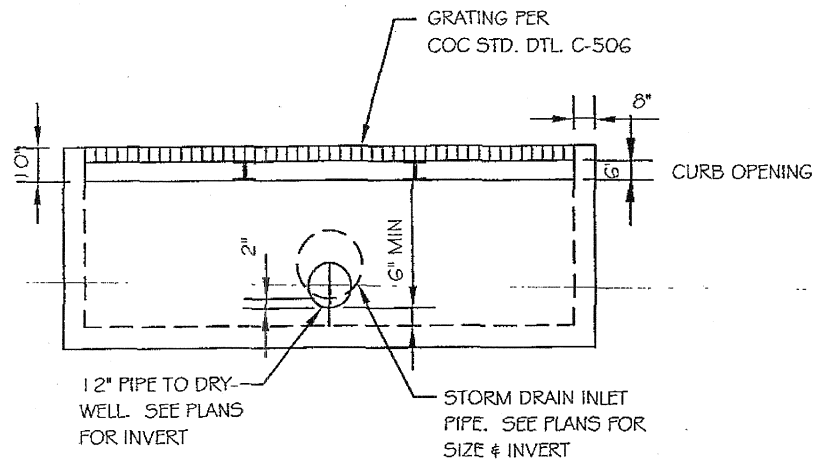
DATE

*Elizabeth W. King*  
CITY ENGINEER  
*January 11, 2002*

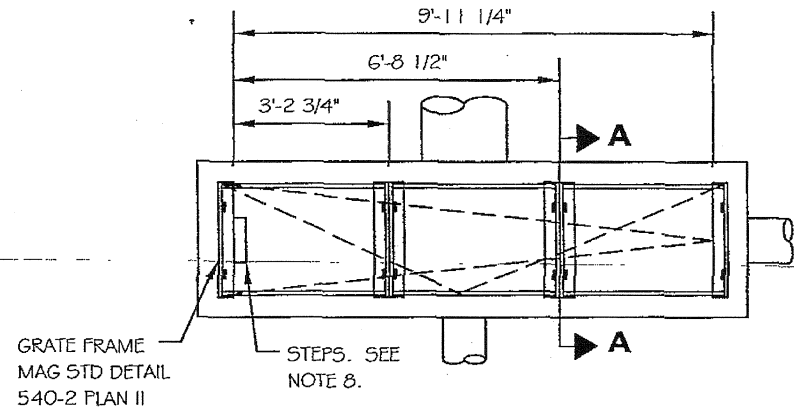
DETAIL NO.

**C-504**

NTS



**FRONT ELEVATION**



**TRIPLE CATCH BASIN**

**NOTES:**

1. ALL CONCRETE SHALL BE M.A.G. CLASS 'A'.
2. CONNECTOR PIPES MAY BE PLACED IN ANY WALL AS PER PLAN.
3. FLOOR BASIN SHALL BE TROWELLED TO A HARD, SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
4. CONNECTOR PIPE SHALL BE TRIMMED TO THE FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
5. PLANS SHOULD SPECIFY GRATE ELEVATION AND INVERT ELEVATION.
6. RETENTION BASIN INLET MAY BE PREFABRICATED PROVIDING A SHOP DRAWING IS APPROVED BY THE ENGINEER PRIOR TO FABRICATION.
7. THE FRAME SHALL BE MAG STD DETAIL 540-2, PLAN II, GRATE PER CHANDLER DET. #C-506.

DETAIL NO.

**C-507**

NTS



CITY OF  
CHANDLER  
STANDARD  
DETAIL

**BELOW GRADE RETENTION BASIN  
INLET (BUBBLER BOX)**

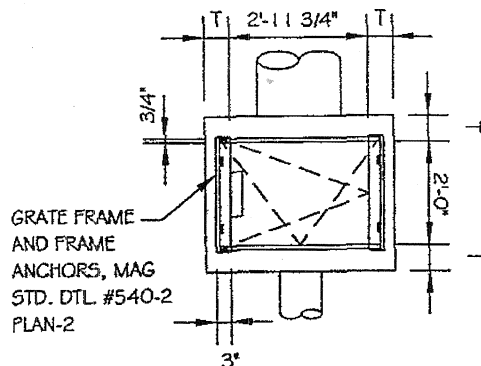
APPROVED

*Elizabeth Williams*  
CITY ENGINEER  
DATE: *January 11, 2002*

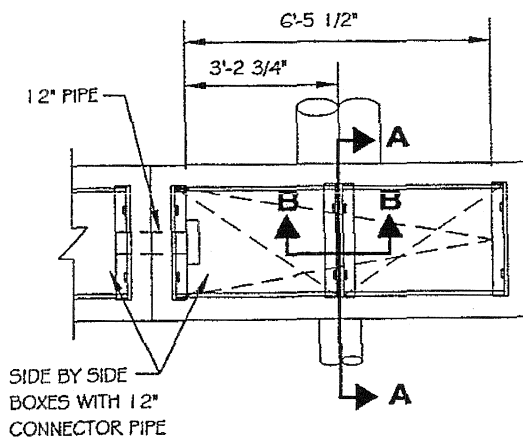
DETAIL NO.

**C-507**

PAGE 1 OF 3



**SINGLE CATCH BASIN**



**DOUBLE CATCH BASIN**

**NOTES: (CONT)**

8. STEPS (MAG DET. 428 POLYPROPYLENE)  
V = 3' (INCL) PLACE ONE STEP 12" ABOVE  
THE FLOOR OF THE BASIN. V OVER 3',  
PLACE STEPS AT 12" INTERVALS FROM  
THE FLOOR OF THE BASIN WITH THE TOP  
STEP AT 12" (MIN) BELOW THE TOP OF GRATE.
9. ALL EXPOSED METAL HARDWARE SHALL BE  
GIVEN ONE SHOP COAT OF NO. 1 PAINT AND  
2 FIELD COATS OF NO. 10 PAINT AS PER  
M.A.G. SECTION 790.
10. ALL METAL UNITS SHALL BE FABRICATED  
FROM STRUCTURAL STEEL EXCEPT AS NOTED.  
STRUCTURAL STEEL SHALL BE IN ACCORDANCE  
WITH ASTM A-36.
11. WELDING SHALL BE IN ACCORDANCE WITH  
MAG WELDING SPECIFICATIONS.

DETAIL NO.

**C-507**

NTS



CITY OF  
CHANDLER  
STANDARD  
DETAIL

**BELOW GRADE RETENTION BASIN  
INLET (BUBBLER BOX)**

APPROVED:

*Benjamin D. Patton*  
CITY ENGINEER

DATE:

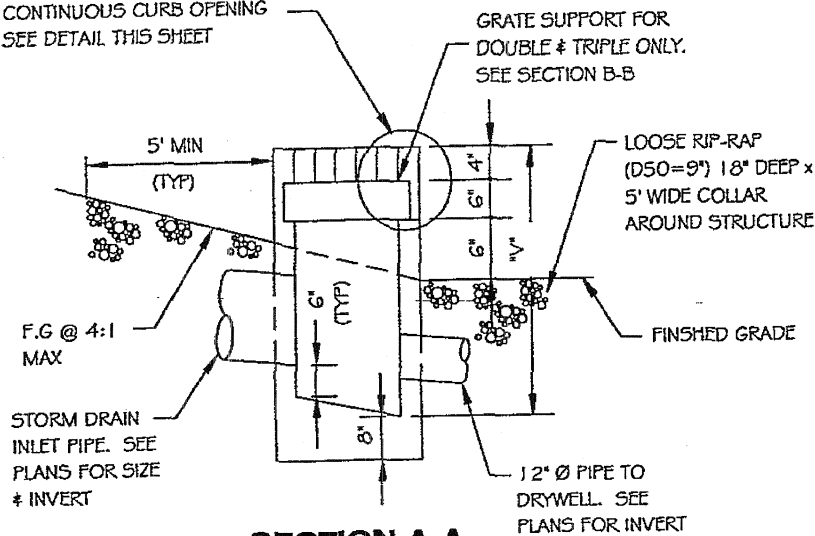
11-19-97

DETAIL NO.

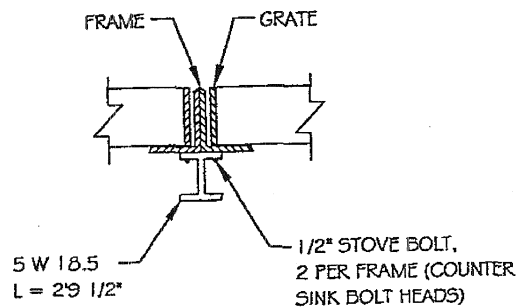
**C-507**

PAGE 2 OF 3

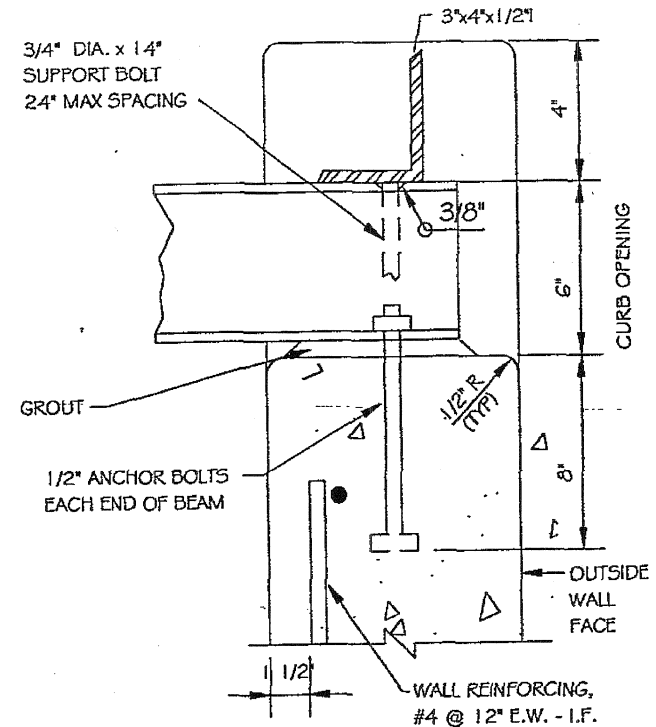
CONTINUOUS CURB OPENING  
SEE DETAIL THIS SHEET



**SECTION A-A**



**SECTION B-B**



**INLET CURB OPENING**

**CATCH BASIN WALL THICKNESS**

T = 8" IF V IS UP TO 8'  
(IF V EXCEEDS 8', SPECIAL DESIGN IS REQUIRED)  
V = 3'-0" UNLESS OTHERWISE NOTED

DETAIL NO.

**C-507**

NTS



CITY OF  
CHANDLER  
STANDARD  
DETAIL

**BELOW GRADE RETENTION BASIN  
INLET (BUBBLER BOX)**

APPROVED:

*Ben D. Patterson*  
CITY ENGINEER

DATE:

11-19-99

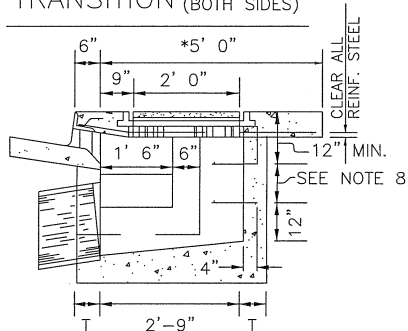
DETAIL NO.

**C-507**

PAGE 3 OF 3



TRANSITION (BOTH SIDES)



Technical drawing of a wing basin and maintenance basin assembly. The drawing shows a side view of a rectangular basin with a sloped bottom. A horizontal dowel bar is positioned across the width of the basin. The drawing includes dimensions: a total length of  $L=3', 6', 10', \text{OR } 17'$ ; a width of 6 inches; a height of 1'-4 inches; a sloped bottom with a 1:1 1/2 inch pitch; and a maintenance basin section that is 3' 0 inches long and 6 inches wide. The drawing also includes labels for 'WING BASIN', 'MAINTENANCE BASIN', 'DOWEL BAR', and 'SEE NOTES FOR THE FRAME AND COVER SPECS'.

3"  
9"  
#4 REINF. STEEL  
DOWEL BAR

## NOTES

1. TYPES ARE DESIGNATES AS FOLLOWS:  
'M'.. NO WING, 'M-1'.. ONE WING,  
'M-2'.. TWO WINGS.
2. ALL CONCRETE SHALL BE CLASS 'A'.
3. ALL REINFORCING STEEL SHALL BE DEFORMED BARS AND SHALL CONFORM TO A.S.T.M. SPECIFICATION 615.
4. CONNECTOR PIPES SHALL BE PLACED IN THE APPROPRIATE WALL OF THE MAINTENANCE BASIN.
5. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD, SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
6. CONSTRUCTION DRAINS SHALL BE INSTALLED IN ALL INLETS BUILT WITH PAVING PROJECTS.
7. LOCATE WING BASIN ON UPSTREAM SIDE OF MAINTENANCE BASIN FOR TYPE M-1. WING BASINS FOR TYPE M-2 SHALL BE BOTH SIDES OF MAINTENANCE BASIN.
8. STEPS (M.A.G. DET. 428 POLYPROPYLENE)-V=3' (INCL.), PLACE ONE STEP 12" ABOVE THE FLOOR OF THE BASIN. V OVER 3', PLACE STEPS AT 12" INTERVALS FROM THE FLOOR OF THE BASIN WITH THE TOP STEP AT 12" (MIN.) BELOW THE TOP OF THE GRATE.
9. ACCESS FRAME AND COVER PER DET. G-3530

CATCH BASIN WALL THICKNESS
T = 6" IF V = 4' OR LESS
T = 8" IF V = 4' TO 8'
(IF V EXCEEDS 8', SPECIAL DESIGN IS REQUIRED.)
L = 0' UNLESS SPECIFIED ON THE PLANS
V = 3'-6" MIN. WHEN L = 0.3' OR 6'
V = 4'-0" MIN WHEN L = 10' OR 17'

\*4'-0" IN LOCATIONS WHERE 4' SIDEWALK IS REQ'D.





SIZE OF OUTFALL CONDUIT	FRAME ANGLES	SHEAR PIN CLIP ANGLES	SHEAR PINS	ANCHOR BOLTS	HINGE PINS	HINGE ANGLES	HINGE STD. PIPE	HINGE TO FRAME WELDS	ANGLE TO FRAME WELDS	BARRIER BARS PLAIN	NO. OF EQUAL BARRIER BAR SPACES (HORIZ.)	NO. OF EQUAL BARRIER BAR SPACES (VERT.)	H (OUT TO OUT FRAME ANGLES)	W (OUT TO OUT FRAME ANGLES)	A	B
15"	2X2X1/4	4X4X1/4	1-1/8Ø	5/8Ø	1/2"Ø	2X2X1/4	3/4"	1/8	1/8	1/2"Ø	3	5	34"	20"	SINGLE HINGE CENTERED	
18"	2X2X1/4	4X4X1/4	1-1/8Ø	5/8Ø	1/2"Ø	2X2X1/4	3/4"	1/8	1/8	1/2"Ø	3	5	34"	20"	SINGLE HINGE CENTERED	
24"	2X2X1/4	4X4X1/4	1-1/8Ø	5/8Ø	1/2"Ø	2X2X1/4	3/4"	1/8	1/8	1/2"Ø	3	5	34"	20"	SINGLE HINGE CENTERED	
30"	2X2X1/4	4X4X1/4	1-1/8Ø	5/8Ø	1/2"Ø	2X2X1/4	3/4"	1/8	1/8	1/2"Ø	3	5	34"	20"	SINGLE HINGE CENTERED	
36"	2X2X1/4	4X4X1/4	2-1/8Ø	5/8Ø	1/2"Ø	2X2X1/4	3/4"	1/8	1/8	1/2"Ø	5	5	42"	32"	SINGLE HINGE CENTERED	
42"	2X2X1/4	4X4X1/4	2-1/8Ø	5/8Ø	1/2"Ø	2X2X1/4	3/4"	1/8	1/8	1/2"Ø	5	6	42"	32"	2 HINGES 0 0	
48"	3X3X7/16	5X3X1/4	2-1/8Ø	5/8Ø	3/4"Ø	2-1/2X 2-2X1/4	1"	1/8	1/8	1/2"Ø	5	7	47"	38"	3"	1"
54"	3X3X7/16	5X3X1/4	2-1/8Ø	5/8Ø	3/4"Ø	2-1/2X 2-2X1/4	1"	1/8	1/8	1/2"Ø	6	8	54"	44"	5"	3"
60"	3X3X7/16	5X3X1/4	2-1/8Ø	5/8Ø	3/4"Ø	2-1/2X 2-2X1/4	1"	1/8	1/8	1/2"Ø	7	9	60"	50"	9"	4"
66"	3X3X7/16	5X3X1/4	2-1/8Ø	5/8Ø	3/4"Ø	2-1/2X 2-2X1/4	1"	1/8	1/8	1/2"Ø	8	10	66"	56"	11"	6"
72"	4X4X5/8	5X3X1/4	2-3/16Ø	5/8Ø	1"Ø	3X3X3/8	1-1/4"	1/8	1/8	1/2"Ø	9	11	73"	62"	15"	7"
78"	4X4X5/8	5X3X1/4	2-3/16Ø	5/8Ø	1"Ø	3X3X3/8	1-1/4"	1/8	1/8	1/2"Ø	10	11	79"	68"	17"	9"
84"	4X4X5/8	5X3X1/4	2-3/16Ø	5/8Ø	1"Ø	3X3X3/8	1-1/4"	1/8	1/8	1/2"Ø	11	13	86"	74"	21"	10"
90"	4X4X5/8	5X3X1/4	2-3/16Ø	5/8Ø	1"Ø	3X3X3/8	1-1/4"	1/8	1/8	1/2"Ø	12	13	92"	80"	23"	12"
96"	4X4X5/8	5X3X1/4	2-3/16Ø	5/8Ø	1"Ø	3X3X3/8	1-1/4"	1/8	1/8	1/2"Ø	12	14	98"	86"	29"	12"
108"																
120"																

DETAIL NO.  
P1562



**City of Phoenix**  
**STANDARD DETAIL**

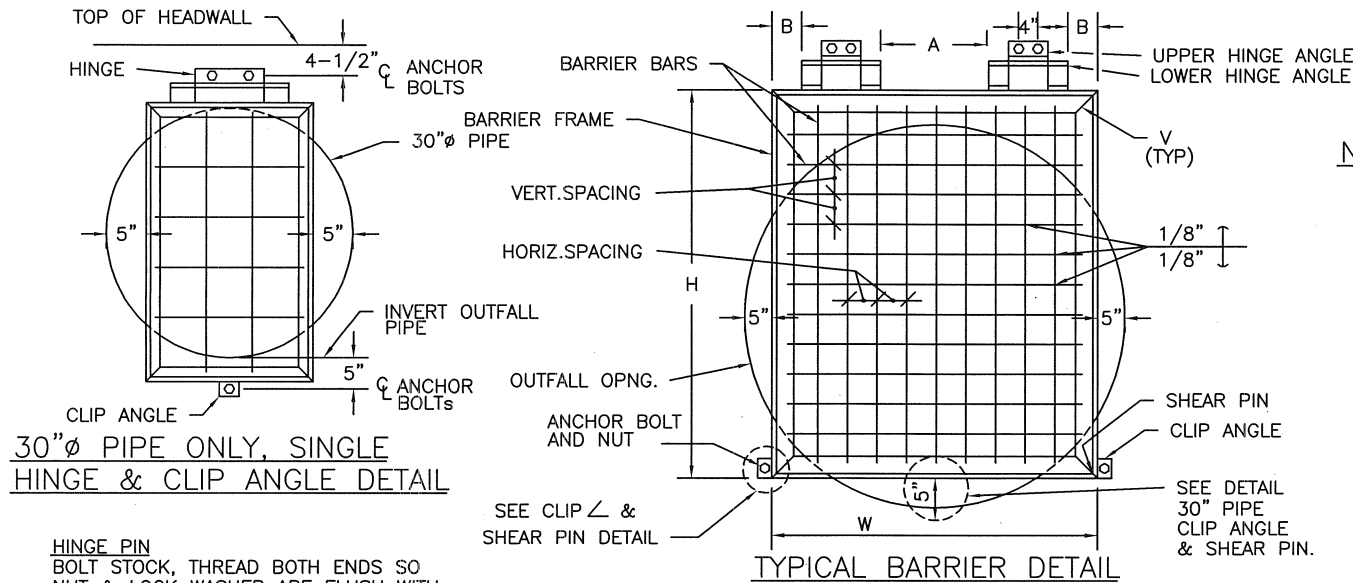
# BARRIER SPECIFICATION SCHEDULE

APPROVED

*Mario Saldamando*  
CITY ENGINEER

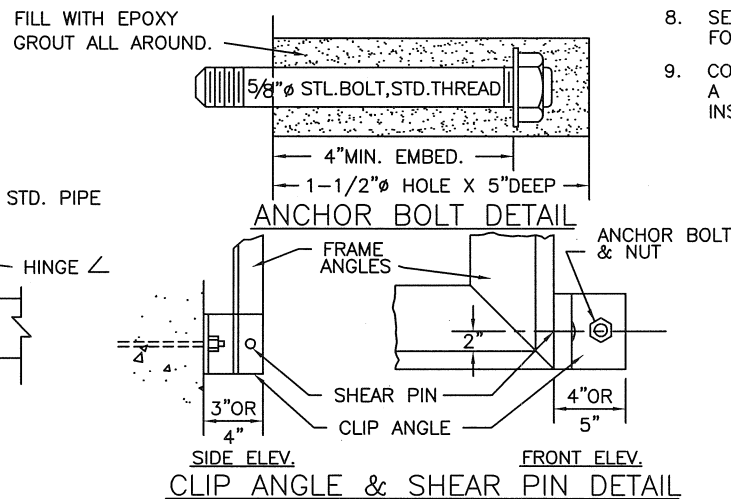
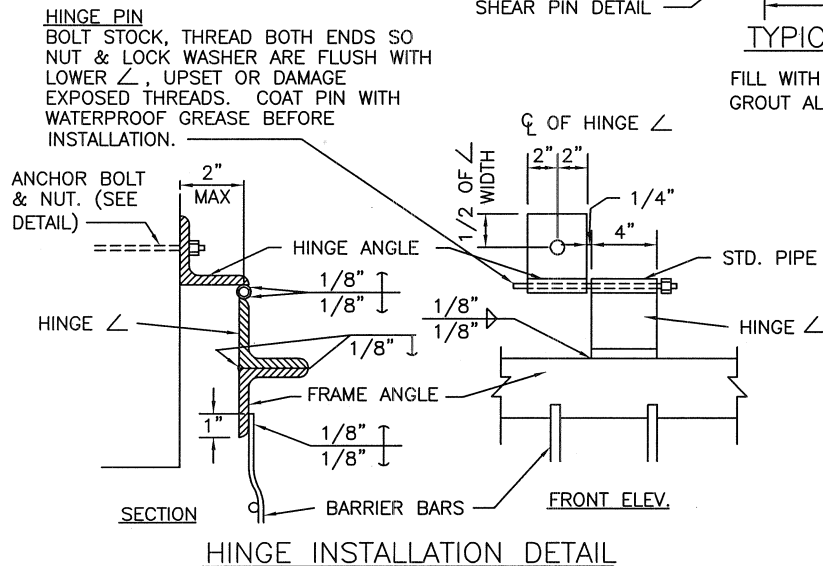
08-08-03  
DATE

DETAIL NO.  
P1562



# **NOTES:**

1. ALL SHEAR PIN ANGLES SHALL FIT SNUGLY AND TRULY FACE TO FACE. COVER WITH WATERPROOF GREASE PRIOR TO INSTALLATION OF PIN.
2. GALVANIZE ALL FERROUS PARTS AFTER FABRICATION.
3. THE SHEAR PIN HOLES IN THE ANGLE SHALL BE DRILLED FOR A TIGHT FIT OF THE SHEAR PINS.
4. FRAME AND HINGE ANGLES SHALL HAVE THE OUTSTANDING LEGS OUT FOR OUTLETS.
5. ALL ANCHOR BOLTS SHALL BE 5/8"Ø ANCHOR BOLTS EMBEDDED 4"(MIN.) INTO EPOXY GROUT.
6. ALL SHEAR PINS ARE TO BE PEENED BOTH ENDS AFTER INSTALLATION.
7. SHEAR PIN MATERIAL SHALL BE COMMERCIALY PURE ALUMINUM WIRE, ALLOY 1100, TEMPER 0, FEDERAL SPEC. QQ-A-411.
8. SEE BARRIER SHEDULE, DET. P1562 FOR VARIABLE DIMENSIONS.
9. COVER ALL MOVABLE CONTACT SURFACE WITH A COAT OF WATERPROOF GREASE PRIOR TO INSTALLATION.



DETAIL NO.  
P1563



**City of Phoenix**  
**STANDARD DETAIL**

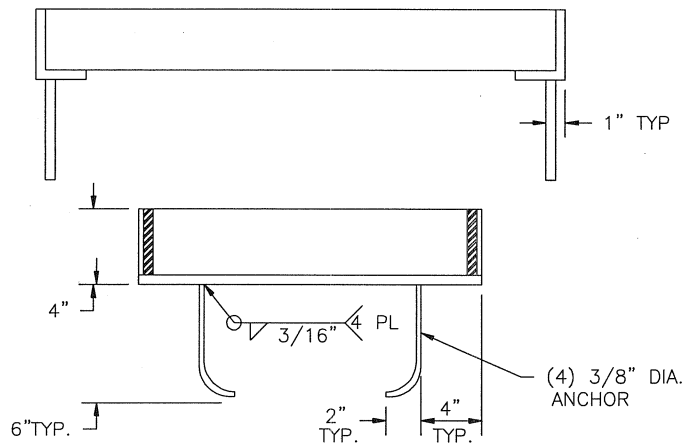
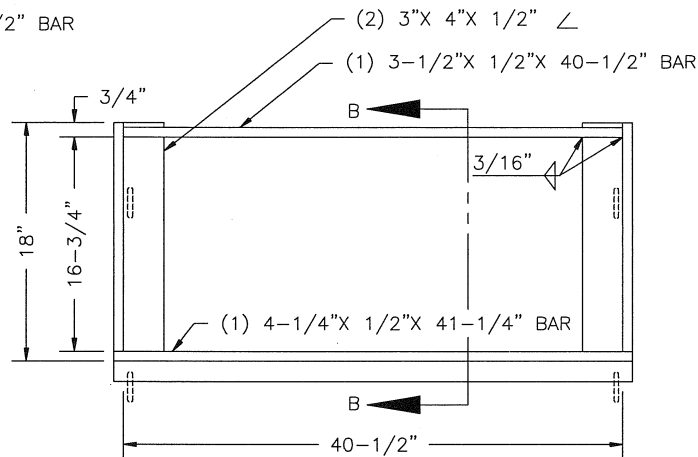
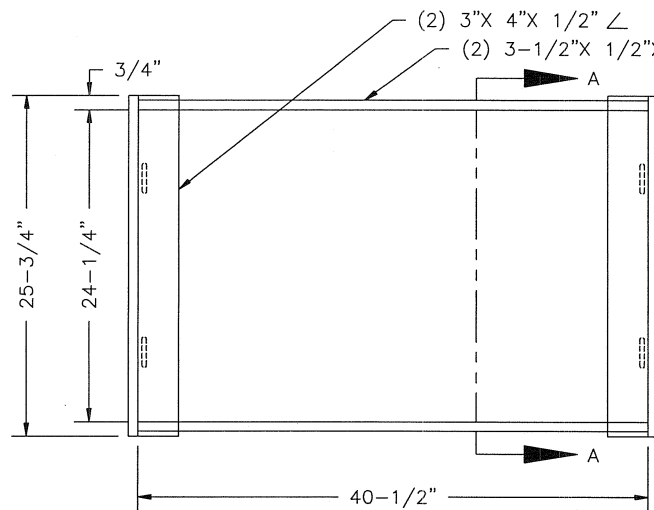
STORM SEWER ACCESS BARRIER

APPROVED

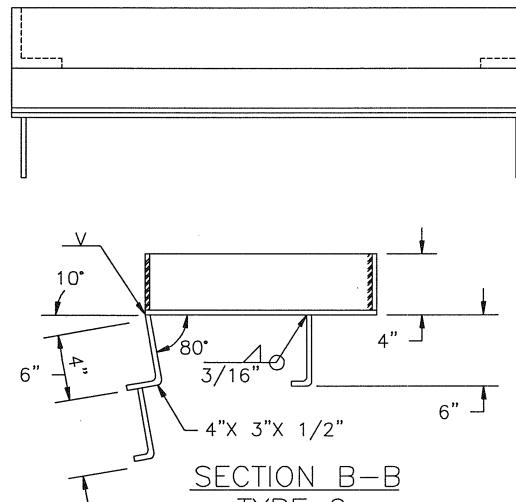
*Mario Saldamando*  
CITY ENGINEER

07-19-04  
DATE

DETAIL NO.  
P1563



SECTION A-A  
TYPE 1



SECTION B-B  
TYPE 2

### NOTES

1. FRAME & FRAME SUPPORT SHALL BE FABRICATED FROM STRUCTURAL STEEL EXCEPT AS NOTED. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH A.S.T.M. A-36.
2. WELDING SHALL BE IN ACCORDANCE WITH M.A.G. WELDING SPECIFICATIONS.
3. FRAME AND GRATE SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY.
4. THE COMPLETED ASSEMBLY SHALL BE GIVEN ONE SHOP COAT OF NO. 1 PAINT, AND TWO FIELD COATS OF NO. 10 PAINT AS PER SECTION 790.
5. THE FRAME SHALL BE FABRICATED TO WITHIN  $\pm 1/8"$  OF SPECIFIED DIMENSIONS.

DETAIL NO.  
P1564



City of Phoenix  
STANDARD DETAIL

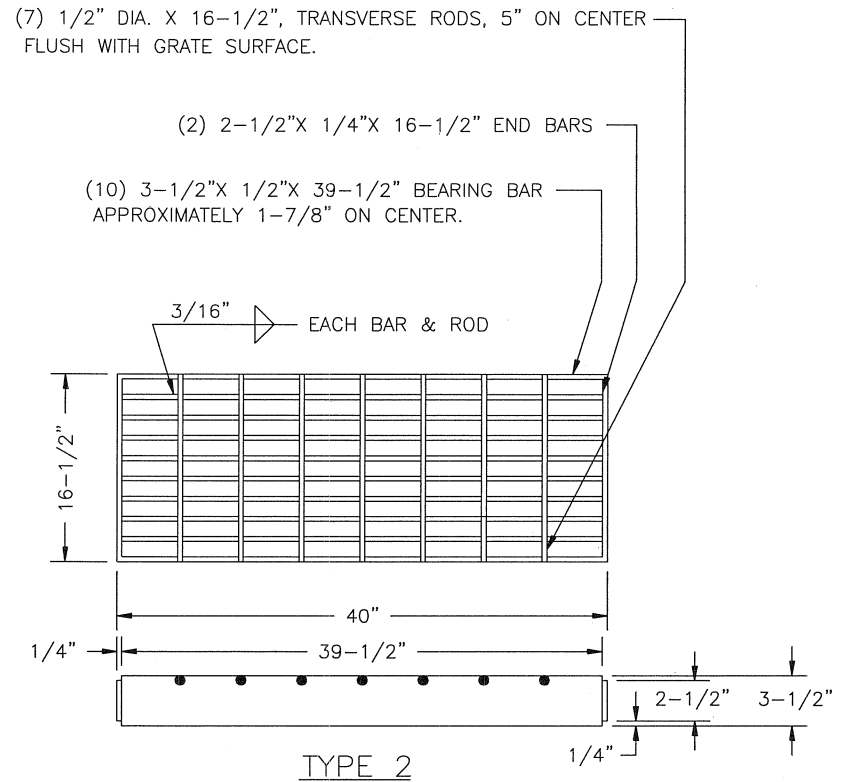
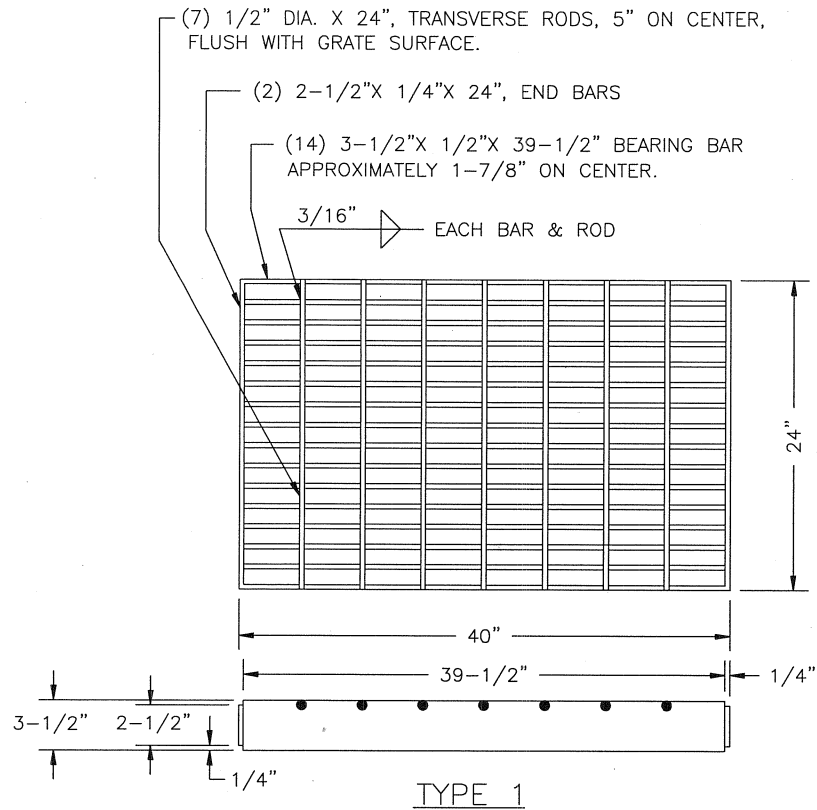
CATCH BASIN GRATE FRAMES

APPROVED

*Kenny W. Hain*  
CITY ENGINEER

07-09-92  
DATE

DETAIL NO.  
P1564



NOTES:

1. ALL STEEL SHALL BE IN ACCORDANCE WITH A.S.T.M. A-36.
2. WELDING SHALL BE IN ACCORDANCE WITH A.W.S. SPECIFICATIONS.
3. FRAME AND GRATE SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY.
4. THE COMPLETED ASSEMBLY SHALL BE GIVEN ONE SHOP COAT OF NO. 1 PAINT AND TWO FIELD COATS OF NO. 10 PAINT AS PER SECTION 790.
5. THE GRATE SHALL BE FABRICATED TO WITHIN 1/8" OF SPECIFIED DIMENSIONS.

DETAIL NO.  
P1565



City of Phoenix  
STANDARD DETAIL

CATCH BASIN GRATES

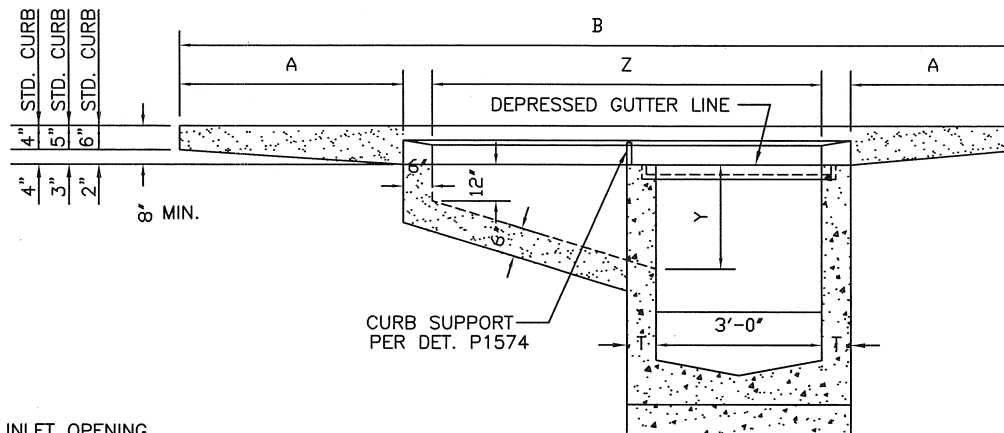
APPROVED

*Kenny W. Hain*  
CITY ENGINEER

07-09-92  
DATE

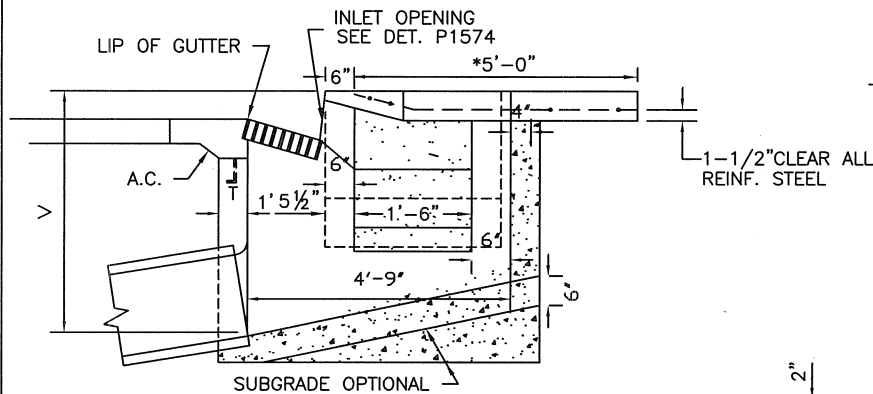
DETAIL NO.  
P1565





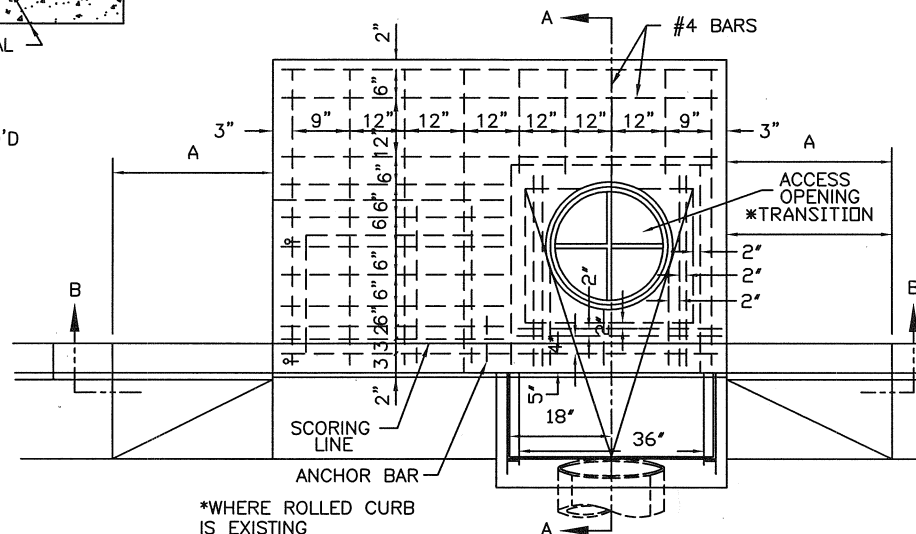
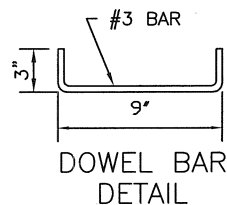
DEPRESSED GUTTER TRANSITION			
CURB HEIGHT	A	B	
		K7	K14
4"	3'-3"	14'-6"	21'-6"
5"	2'-6"	13'	20'
6"	1'-9"	11'-6"	18'-6"

SECTION B-B



SECTION A-A

\*4'-0" IN LOCATIONS WHERE 4' S/W IS REQ'D



NOTES:

1. DIMENSION Z SHALL EQUAL 7' OR 14' TYPES ARE DESIGNATED AS FOLLOWS:  
 $\Delta$  TYPE K7 (Z=7', Y=24")  
 $\Delta$  TYPE K14 (Z=14', Y=30")
2. ALL CONCRETE SHALL BE CLASS 'A'.
3. ALL REINFORCING STEEL SHALL BE DEFORMED BARS AND SHALL CONFORM TO A.S.T.M. SPECIFICATION 615
4. CONNECTOR PIPES MAY BE PLACED IN ANY WALL BENEATH THE GRATE AS PER PLANS.
5. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
6. CONSTRUCTION DRAINS SHALL BE INSTALLED WHEN NOTED. (SEE DET. P1575).
7. ACCESS FRAME AND COVER PER DET. P1561.
- \* 8. THE FRAME SHALL BE DET. P1564, TYPE 2 AND THE GRATE SHALL BE DET. P1565, TYPE 2.

CATCH BASIN WALL THICKNESS

T=6" IF V IS 4' OR LESS  
 T=8" IF V IS 4' TO 10'  
 IF V EXCEEDS 8' SPECIAL DESIGN IS REQUIRED  
 V=4'-0" UNLESS OTHERWISE NOTED.

DETAIL NO.  
P1567



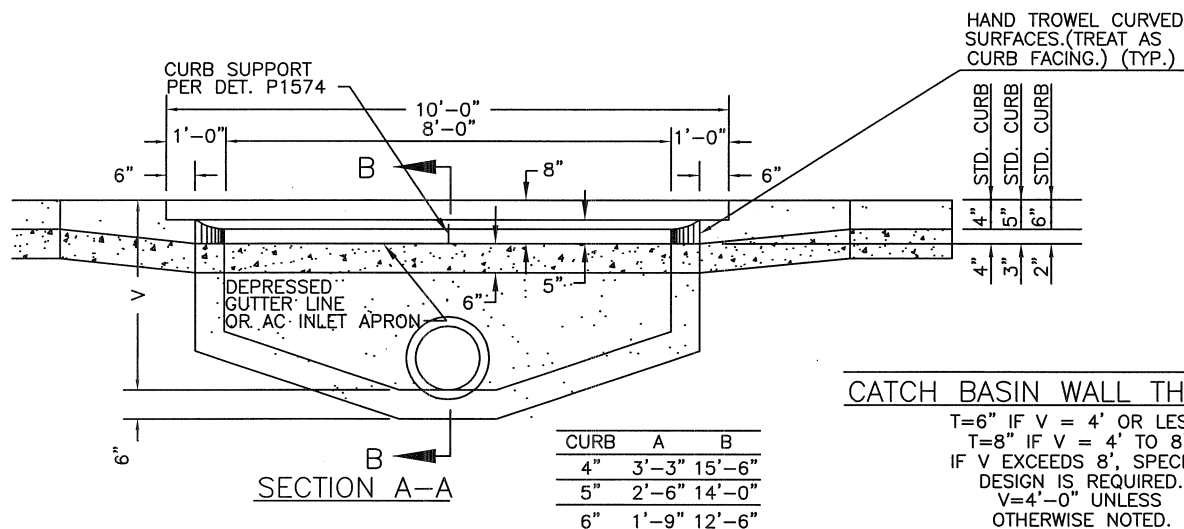
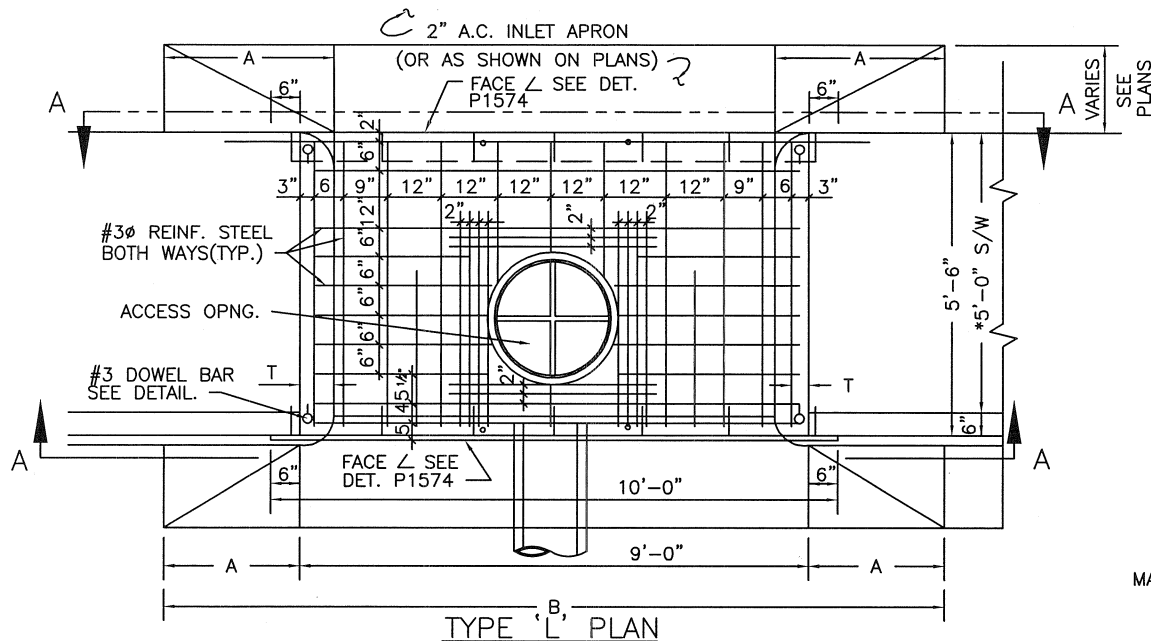
**City of Phoenix**  
STANDARD DETAIL

CATCH BASIN COMBINATION - TYPE "K"

APPROVED  
*Mario Saldamando*  
 CITY ENGINEER

07-19-04  
 DATE

DETAIL NO.  
P1567

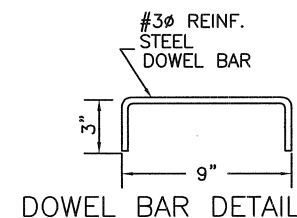
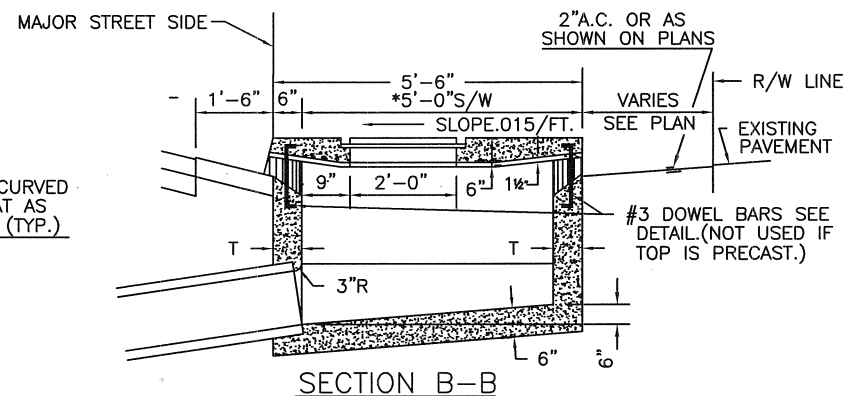


#### CATCH BASIN WALL THICKNESS

T=6" IF V = 4' OR LESS  
 T=8" IF V = 4' TO 8'  
 IF V EXCEEDS 8', SPECIAL  
 DESIGN IS REQUIRED.  
 V=4'-0" UNLESS  
 OTHERWISE NOTED.

#### NOTES:

1. ALL CONCRETE SHALL BE CLASS 'A'.
  2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS AND SHALL CONFORM TO A.S.T.M. SPECIFICATION 615.
  3. CONNECTOR PIPES MAY BE PLACED IN ANY WALL AS PER PLANS.
  4. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD, SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
  5. CONSTRUCTION DRAINS SHALL BE INSTALLED WHEN SPECIFIED. (SEE DET. P1575.)
  6. ACCESS FRAME AND COVER PER DET. P1561.
- \* TO BE 4'-0" IN LOCATIONS WHERE 4' S/W IS REQUIRED.



DETAIL NO.  
P1568



**City of Phoenix**  
STANDARD DETAIL

CATCH BASIN - TYPE "L"  
CURB & PARKWAY OPENING INLET DETAILS

APPROVED

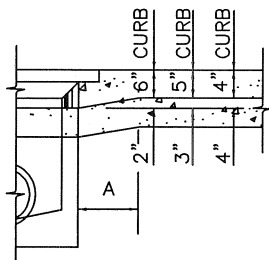
*Mario Saldamando*  
CITY ENGINEER

07-19-04  
DATE

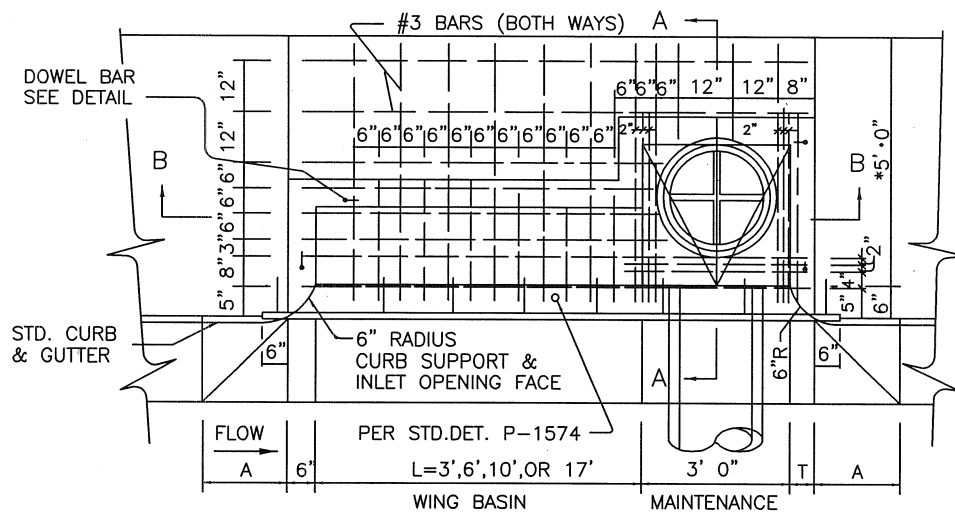
DETAIL NO.  
P1568



GUTTER TRANSITION	
CURB HEIGHT	DIM 'A'
4"	3'-3"
5"	2'-6"
6"	1'-9"

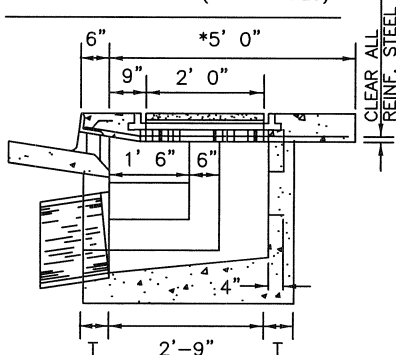


DEPRESSED GUTTER

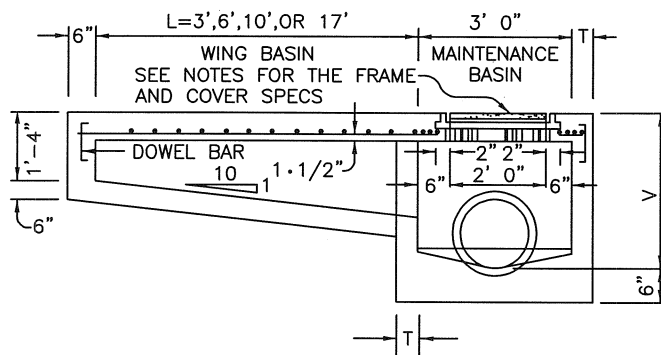


PLAN VIEW

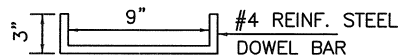
TRANSITION (BOTH SIDES)



SECTION A - A



SECTION B - B



DOWEL BAR  
DETAIL

## NOTES

1. TYPES ARE DESIGNATED AS FOLLOWS:  
'M'.. NO WING, 'M-1'.. ONE WING,  
'M-2'.. TWO WINGS.
2. ALL CONCRETE SHALL BE CLASS 'A'.
3. ALL REINFORCING STEEL SHALL BE DEFORMED BARS AND SHALL CONFORM TO A.S.T.M. SPECIFICATION 615.
4. CONNECTOR PIPES SHALL BE PLACED IN THE APPROPRIATE WALL OF THE MAINTENANCE BASIN.
5. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD, SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
6. CONSTRUCTION DRAINS SHALL BE INSTALLED IN WHEN NOTED.  
(SEE DET. P-1575.)
7. LOCATE WING BASIN ON UPSTREAM SIDE OF MAINTENANCE BASIN FOR TYPE M-1. WING BASINS FOR TYPE M-2 SHALL BE BOTH SIDES OF MAINTENANCE BASIN.
8. ACCESS FRAME AND COVER PER DET. P-1561

## CATCH BASIN WALL THICKNESS

T = 6" IF V = 4' OR LESS  
T = 8" IF V = 4' TO 8'  
(IF V EXCEEDS 8', SPECIAL DESIGN IS REQUIRED.)

L = 0' UNLESS SPECIFIED ON THE PLANS  
V = 3'-6" MIN. WHEN L = 3' OR 6'  
V = 4'-0" MIN WHEN L = 10' OR 17'

\*4'-0" IN LOCATIONS WHERE 4' SIDEWALK IS REQ'D.

DETAIL NO.

P1569-1



**City of Phoenix**  
**STANDARD DETAIL**

CATCH BASIN TYPE "M"

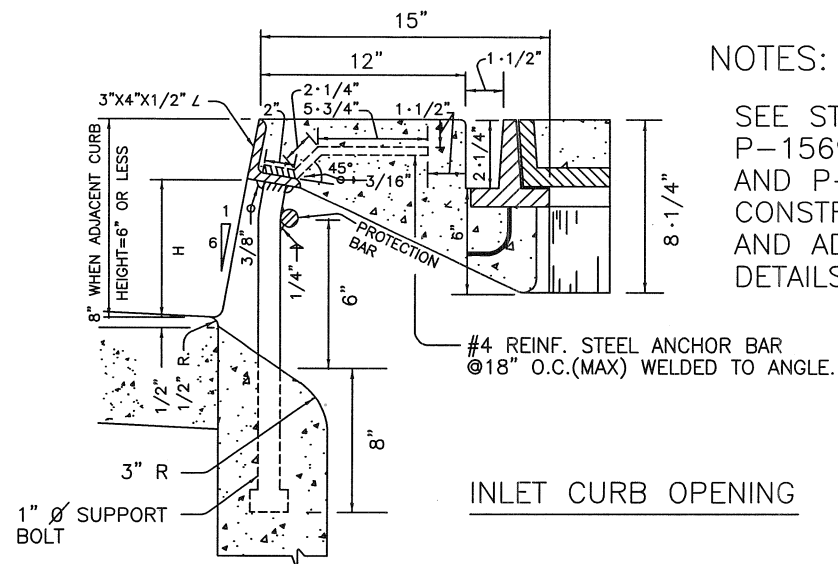
APPROVED

*Mario S. Damiano*  
CITY ENGINEER

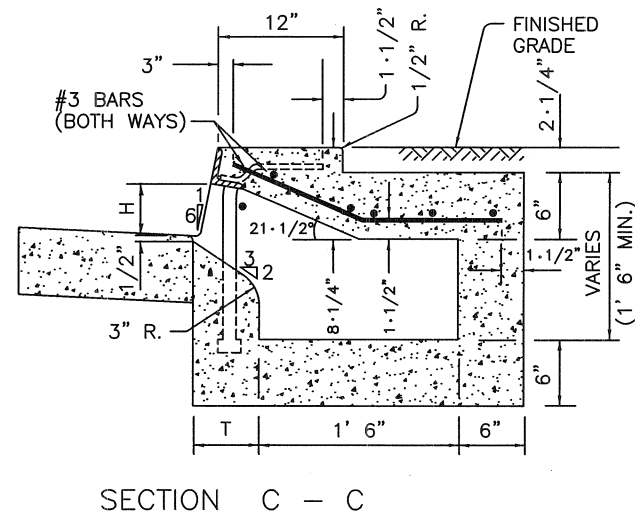
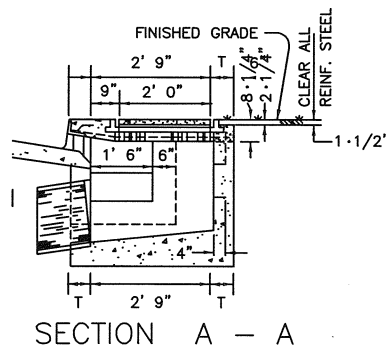
07-19-04  
DATE

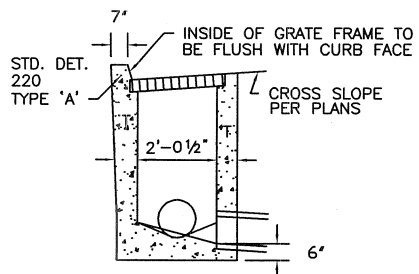
DETAIL NO.

P1569-1

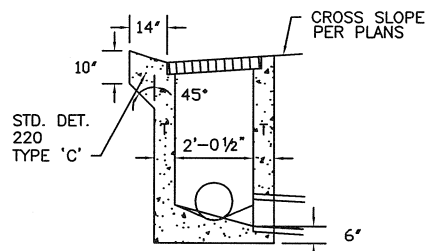


SEE STANDARD DETAILS  
P-1569-1, P-1561,  
AND P-1574 FOR  
CONSTRUCTION NOTES  
AND ADDITIONAL  
DETAILS.

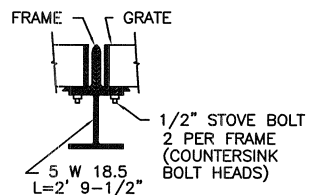




'N' CATCH BASIN IN  
VERTICAL CURB & GUTTER

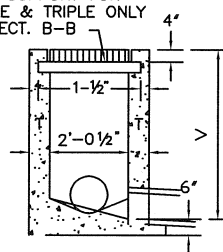


'N' CATCH BASIN IN  
ROLL CURB & GUTTER



SECTION B-B

GRATE SUPPORT FOR  
DOUBLE & TRIPLE ONLY  
SEE SECT. B-B



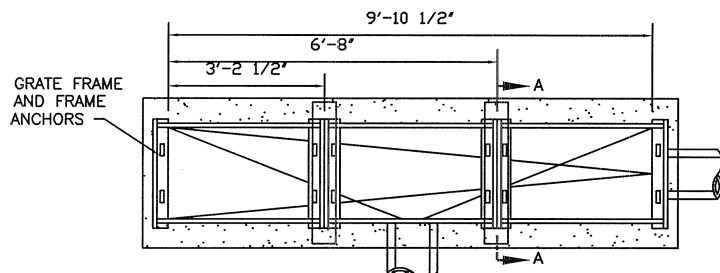
SECTION A-A

#### NOTES:

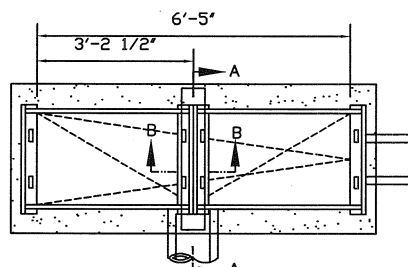
1. ALL CONCRETE SHALL BE CLASS 'A'.
2. CONNECTOR PIPES MAY BE PLACED IN ANY WALL AS PER PLAN.
3. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD, SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
4. CONSTRUCTION DRAINS SHALL BE INSTALLED WHEN NOTED. (SEE DETAIL P1575)
5. CONNECTOR PIPE SHALL BE TRIMMED TO THE FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
6. PLANS SHOULD SPECIFY ELEVATION AND INVERT ELEVATION.
7. THE TYPE 'N' CATCH BASIN MAY BE PREFABRICATED PROVIDING A SHOP DRAWING IS APPROVED BY THE ENGINEER PRIOR TO FABRICATION.
8. THE FRAME SHALL BE DET. P1564, TYPE 1 AND THE GRATE SHALL BE DET. P1565, TYPE 1.

#### CATCH BASIN WALL THICKNESS

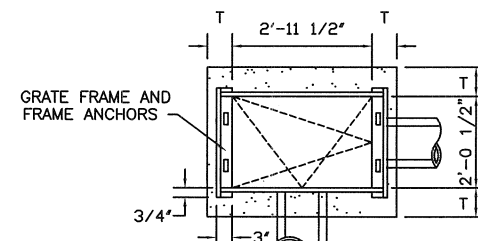
T=6" IF V = 4' OR LESS  
T=8" IF V = 4' TO 8'  
(IF V EXCEEDS 8' SPECIAL DESIGN IS REQUIRED)  
V=3'-0" UNLESS OTHERWISE NOTED.



TRIPLE CATCH BASIN PLAN



DOUBLE CATCH BASIN PLAN



SINGLE CATCH BASIN PLAN

DETAIL NO.  
P1570



**City of Phoenix**  
**STANDARD DETAIL**

CATCH BASIN - TYPE "N"

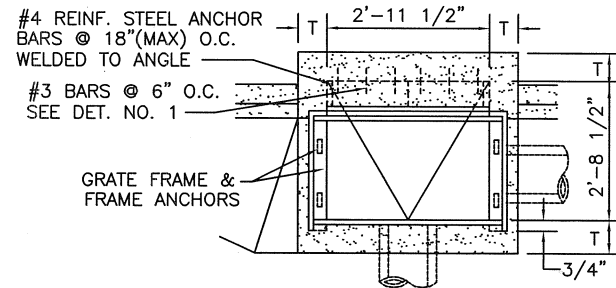
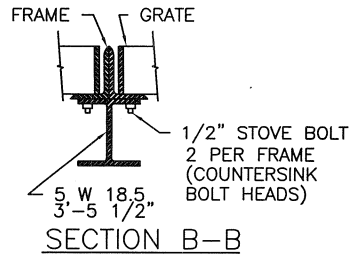
APPROVED

*Mario Saldamando*  
CITY ENGINEER

07-19-04  
DATE

DETAIL NO.  
P1570

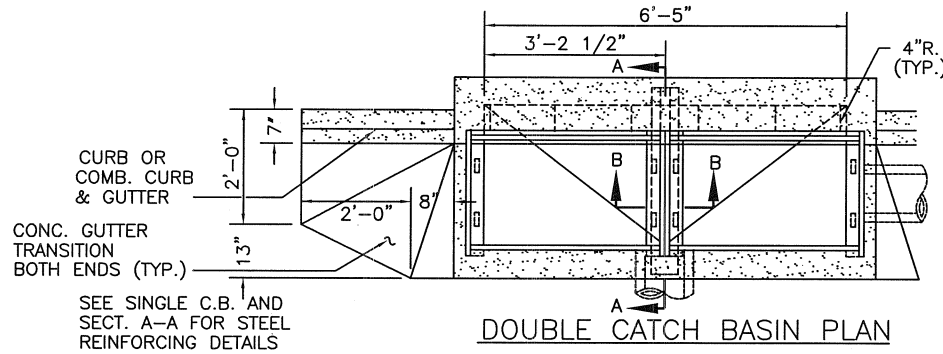




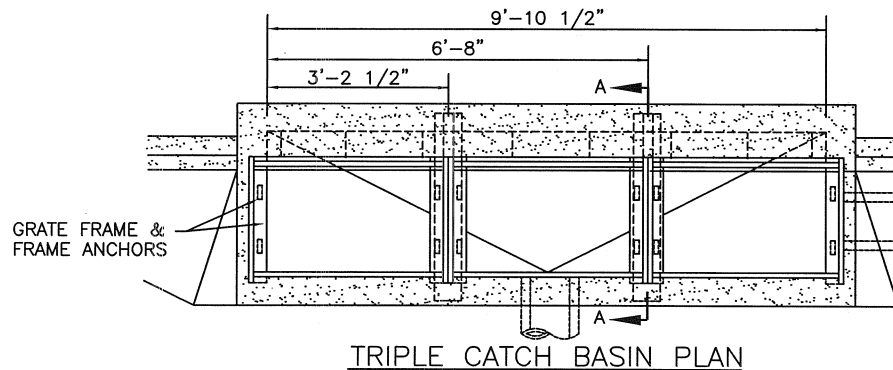
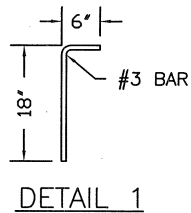
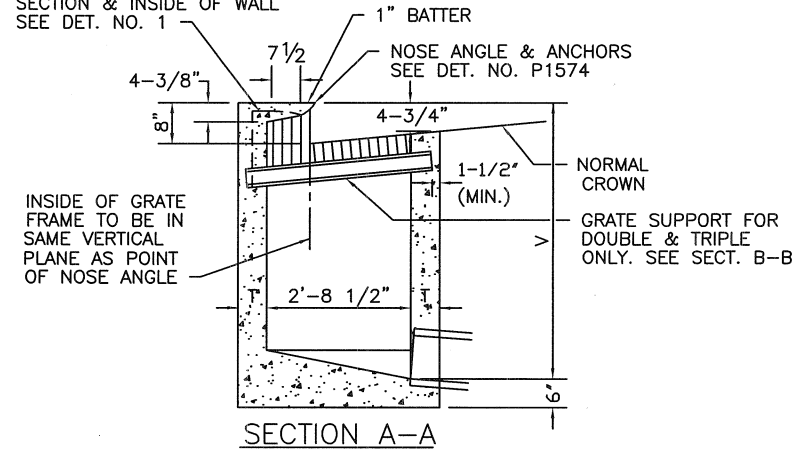
**SINGLE CATCH BASIN PLAN**

**NOTES:**

1. ALL CONCRETE SHALL BE CLASS 'A'.
2. CONNECTOR PIPES MAY BE PLACED IN ANY WALL AS PER PLAN.
3. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD, SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
4. CONSTRUCTION DRAINS SHALL BE INSTALLED WHEN NOTED. (SEE DETAIL P1575)
5. CONNECTOR PIPE SHALL BE TRIMMED TO THE FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
6. THE FRAME SHALL BE DET. P1564, TYPE 1 AND THE GRATE SHALL BE DET. P1565, TYPE 1.



#3 BARS @ 6" O.C., 1'-1/2" CLEAR TO TOP OF NOSE SECTION & INSIDE OF WALL SEE DET. NO. 1



**CATCH BASIN WALL THICKNESS**

T=6" IF V = 4' OR LESS  
T=8" IF V = 4' TO 8'  
IF V EXCEEDS 8' SPECIAL DESIGN IS REQUIRED  
V=3'-6' UNLESS OTHERWISE NOTED.

DETAIL NO.

P1572



**City of Phoenix**  
**STANDARD DETAIL**

CATCH BASIN - TYPE "Q"

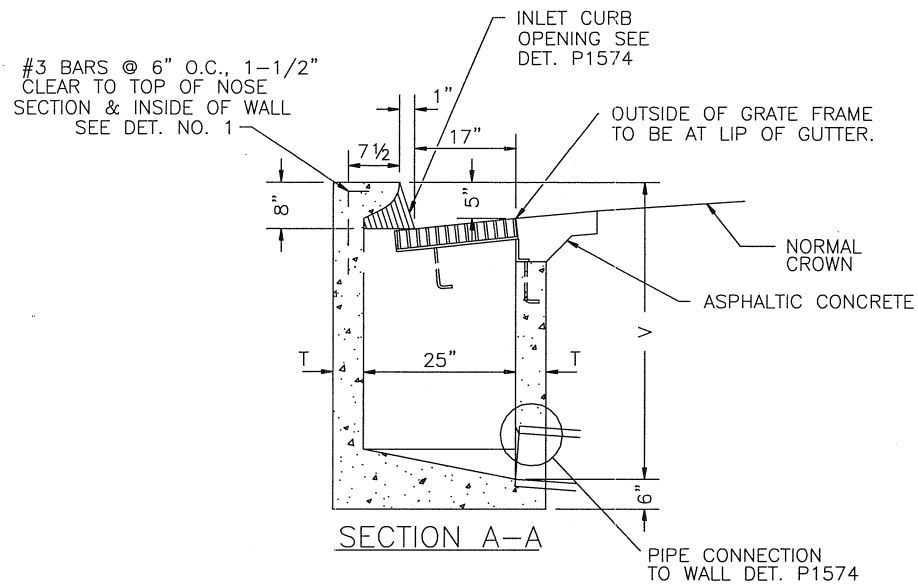
APPROVED

*Mario Saldamando*  
CITY ENGINEER

07-19-04  
DATE

DETAIL NO.

P1572

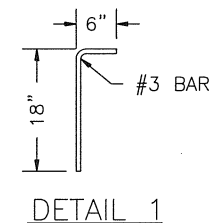
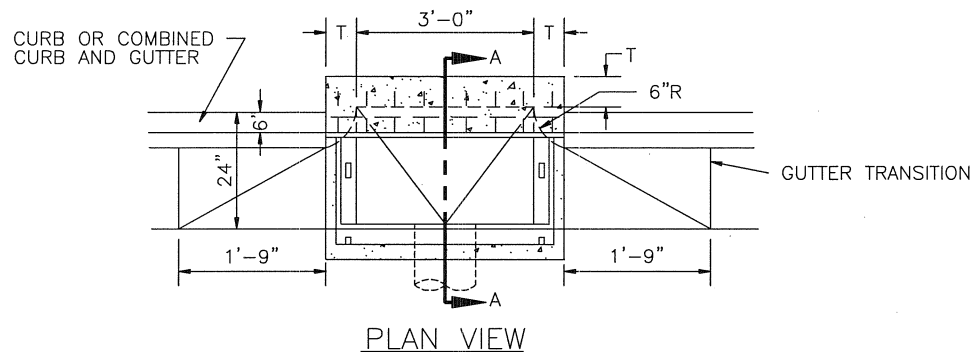


# NOTES:

1. ALL CONCRETE SHALL BE CLASS 'A'.
2. CONNECTOR PIPES MAY BE PLACED IN ANY WALL AS PER PLAN.
3. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD, SMOOTH SURFACE AND SHALL SLOP FROM ALL DIRECTIONS TO OUTLET.
4. THE CONSTRUCTION DRAINS SHALL BE INSTALLED IN ALL INLETS BUILT WITH PAVING PROJECTS (SEE CET. P1575).
5. CONNECTOR PIPE SHALL BE TRIMMED TO THE FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
6. LOCATION OF THE TYPE 'R' CATCH BASIN SHALL BE RESTRICTED TO AREAS WHERE 6" VERTICAL CURB & GUTTER IS EXISTING.
7. ALL REINFORCING STEEL SHALL BE DEFORMED BARS AND SHALL CONFORM TO A.S.T.M. SPECIFICATION 615.
8. THE FRAME SHALL BE DET. P1564, TYPE 2 AND THE GRATE SHALL BE DET. P1565, TYPE 2.

## CATCH BASIN WALL THICKNESS

T=6" IF V = 4' OR LESS  
T=8" IF V = 4' TO 8'  
IF V EXCEEDS 8' SPECIAL DESIGN IS REQUIRED  
V=3'-6' UNLESS OTHERWISE NOTED.



DETAIL NO.  
P1573



City of Phoenix  
STANDARD DETAIL

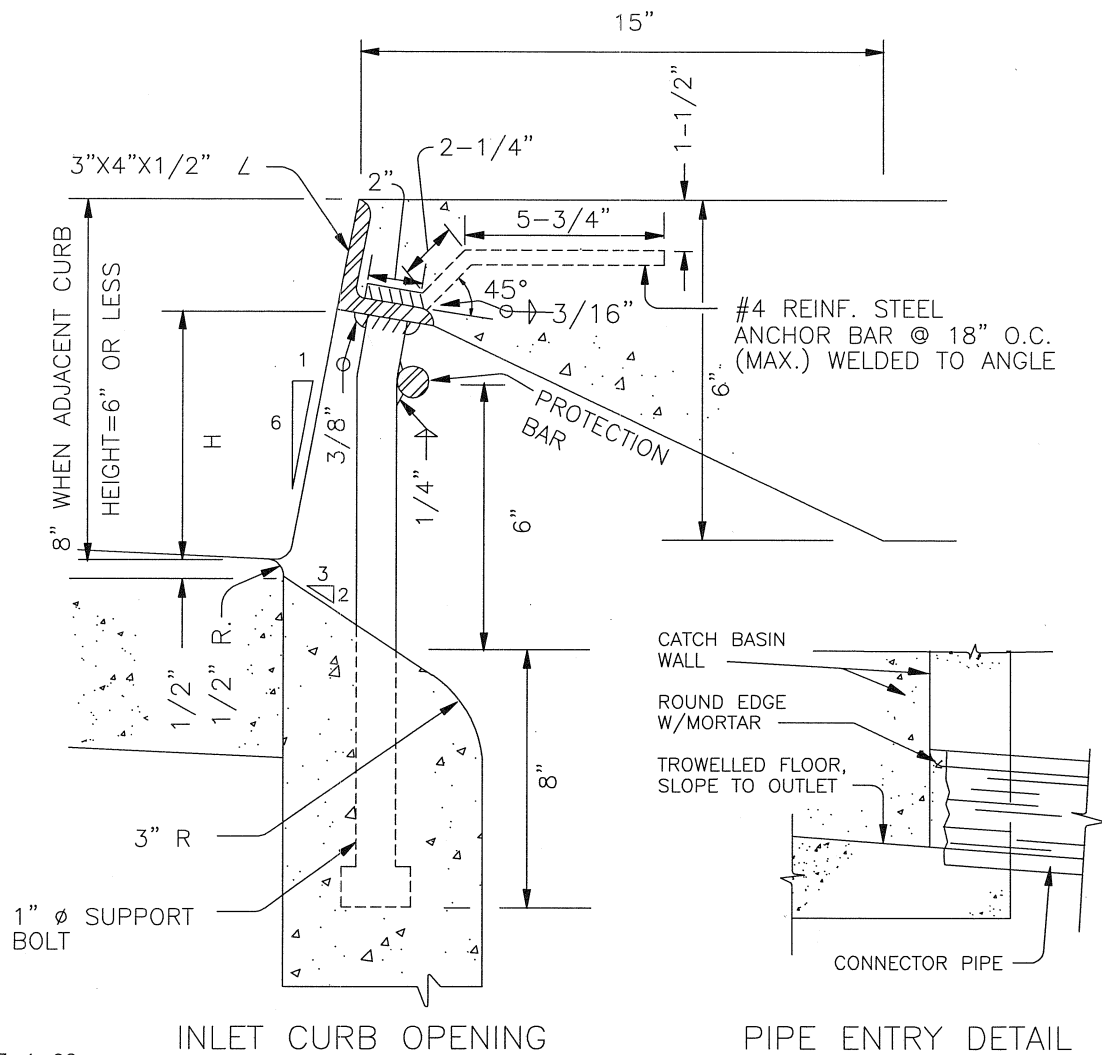
CATCH BASIN - TYPE 'R'

APPROVED

*Kenny W. Hain*  
CITY ENGINEER

07-09-92  
DATE

DETAIL NO.  
P1573



## NOTES

1. CURB OPENING HEIGHT 'H' SHALL BE 5" (MINIMUM) UNLESS OTHERWISE SPECIFIED.
2. WHEN CURB OPENING HEIGHT 'H' EXCEEDS 6", INSTALL 1"Ø STEEL PROTECTION BARS. THE PROTECTION BARS SHALL EXTEND THE FULL LENGTH OF THE CURB OPENINGS AND SHALL BE EMBEDDED 3"(MIN.) AT EACH END.
3. INSTALL ADDITIONAL BARS AT 3 1/2" CLEAR SPACING ABOVE FIRST BAR WHEN OPENING EXCEEDS 13".
4. WHEN CURB OPENING LENGTH EXCEEDS 6', INSTALL 1"Ø STEEL SUPPORT BOLTS, SPACED AT NO MORE THAN 5' O.C.
5. ALL EXPOSED METAL HARDWARE SHALL BE GIVEN ONE SHOP COAT OF NO.1 PAINT AND 2 FIELD COATS OF NO.10 PAINT AS PER SECTION 790.
6. ALL METAL UNITS SHALL BE FABRICATED FROM STRUCTURAL STEEL EXCEPT AS NOTED. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH A.S.T.M. A-36.
7. WELDING SHALL BE IN ACCORDANCE WITH M.A.G. WELDING SPECIFICATIONS.
8. CONNECTOR PIPE SHALL BE TRIMMED TO THE FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
9. WHEN CATCH BASIN IS LOCATED WITHIN A LANDSCAPE PARKWAY SECTION, SEE DETAIL P1569-2 FOR INLET MODIFICATIONS.

REVISÉD: 3-1-92

DETAIL NO.  
P1574



City of Phoenix  
STANDARD DETAIL

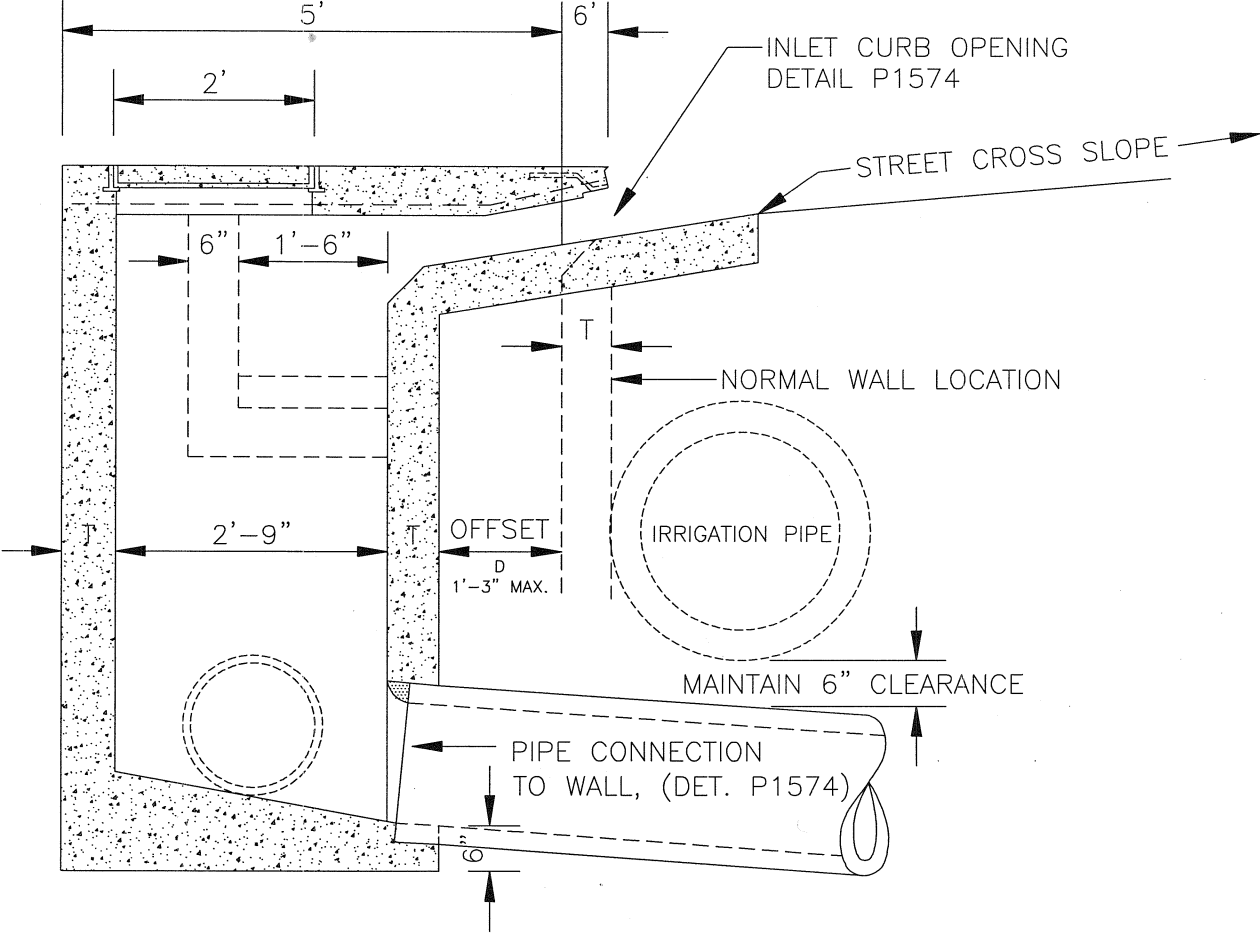
### INLET CURB OPENING & PIPE ENTRY DETAIL

APPROVED

Kenny W. Hain  
CITY ENGINEER

07-09-92  
DATE

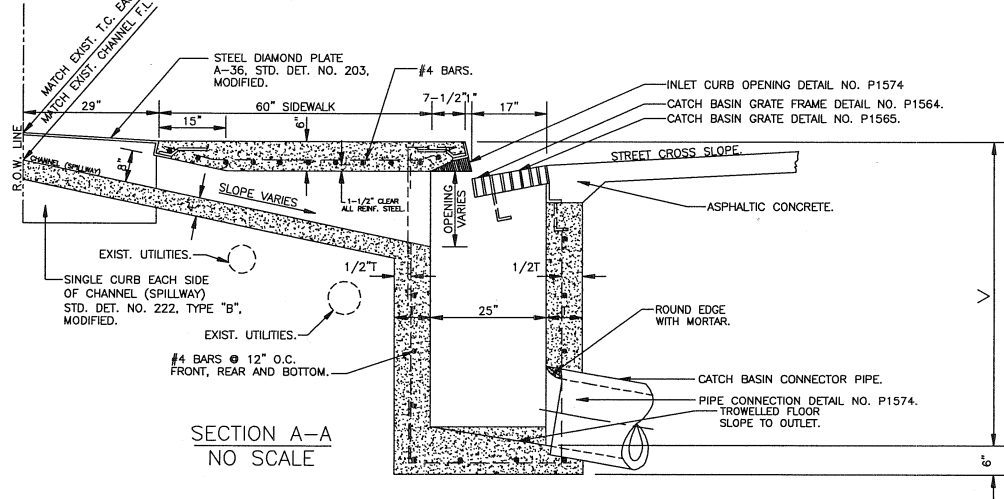
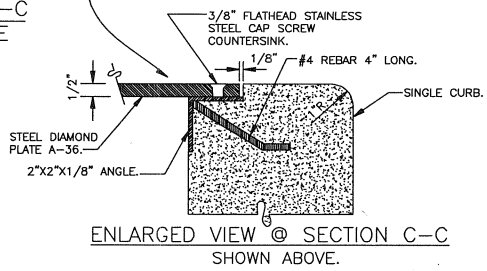
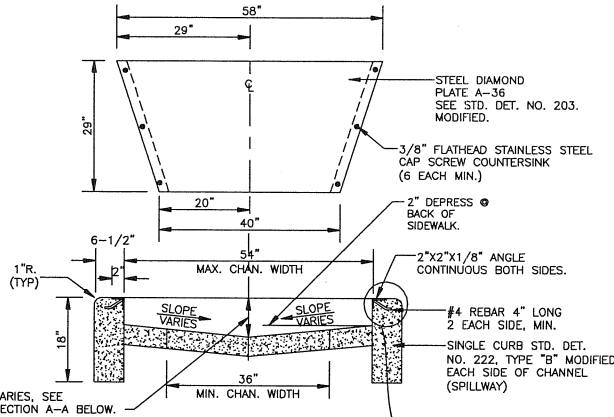
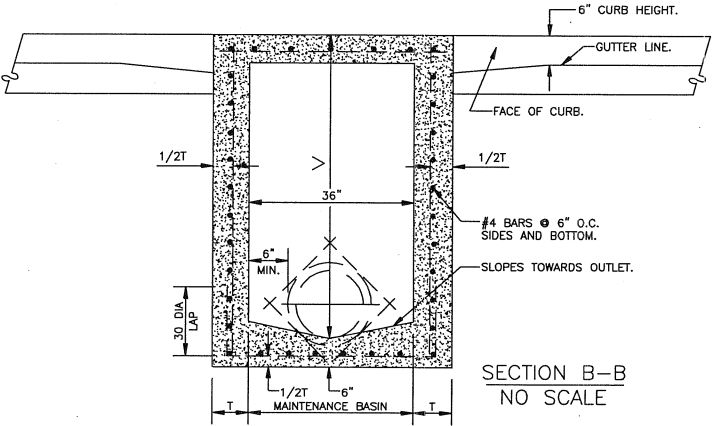
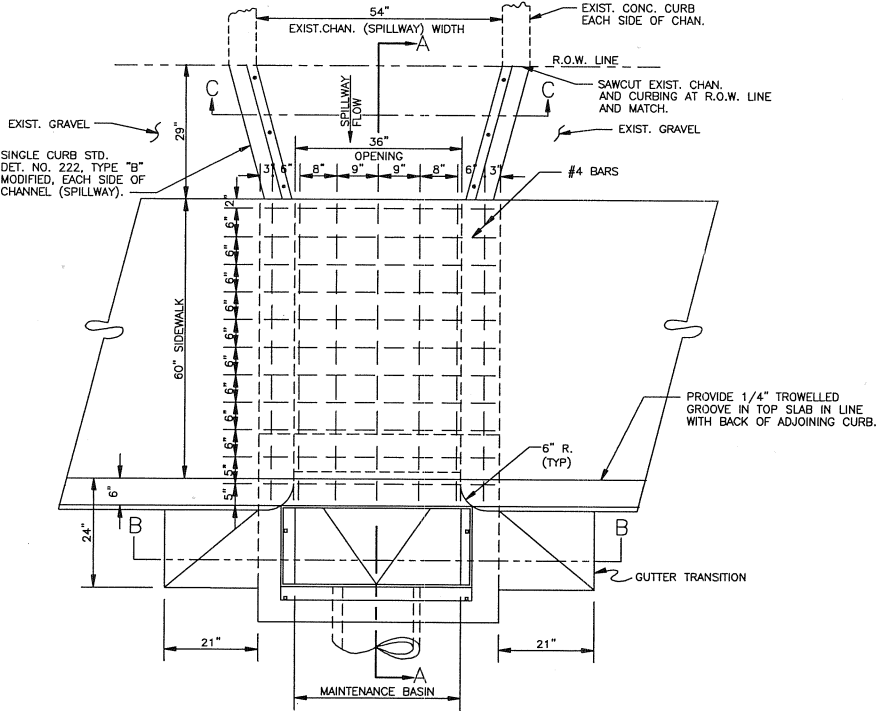
DETAIL NO.  
P1574



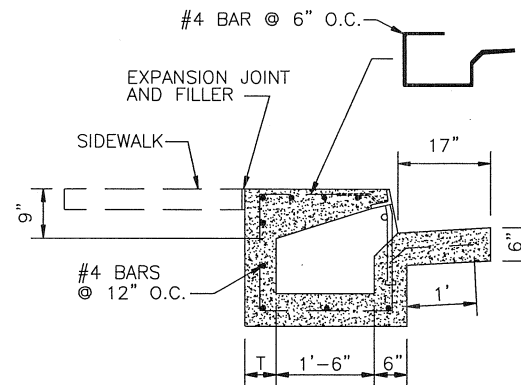
SECTION A-A

FOR ADDITIONAL INFORMATION & NOTES  
SEE CITY OF PHOENIX DETAIL P1569.



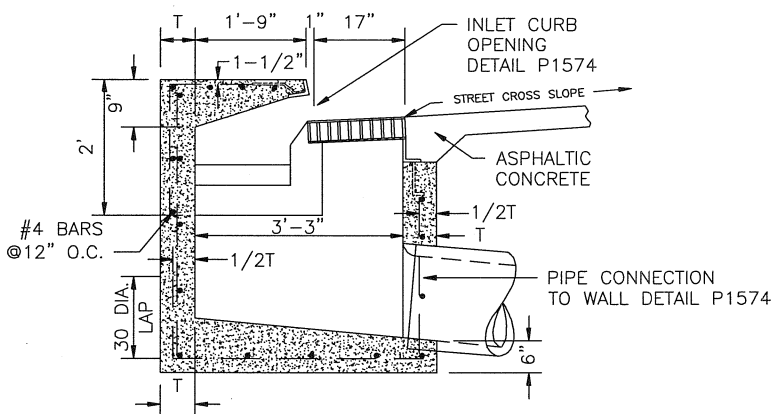


- GENERAL NOTES:
1. ALL CONCRETE SHALL BE CLASS "A".
  2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS AND SHALL CONFORM TO A.S.T.M. SPECIFICATION NO. 615.
  3. CONNECTOR PIPES MAY BE PLACED IN ANY WALL AS PER PLAN.
  4. FLOOR OF BASIN SHALL BE TROWELLED TO A HARD SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
  5. CONNECTOR PIPE SHALL BE TRIMMED TO THE FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
  6. THE FRAME SHALL BE DETAIL P1564, TYPE 2 AND THE GRATE SHALL BE DETAIL P1565, TYPE 2.
  7. TYPE IS DESIGNATED AS FOLLOWS:  
COMBINATION TYPE "L-R" MODIFIED.
- CATCH BASIN WALL THICKNESS & DEPTH
- T=6" IF V ≤ 4'  
T=8" IF V > 4' TO 8'  
V=4" UNLESS OTHERWISE SPECIFIED.



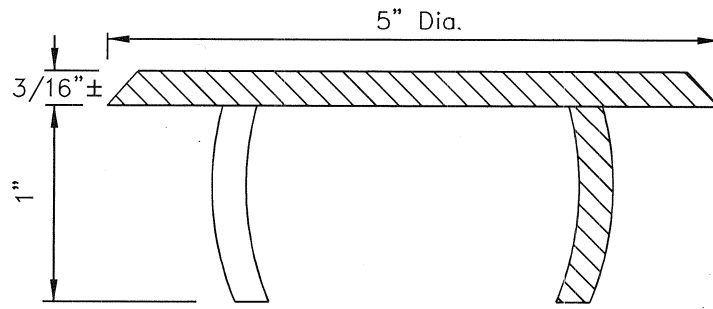
SECTION B-B

1. ALL CONCRETE SHALL BE CLASS "A".
2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS AND SHALL CONFORM TO A.S.T.M. SPECIFICATION NO. 615.
3. CONNECTOR PIPES MAY BE PLACED IN ANY WALL AS PER PLAN.
4. FLOOR BASIN SHALL BE TROWELLED TO A HARD SMOOTH SURFACE AND SHALL SLOPE FROM ALL DIRECTIONS TO OUTLET.
5. CONSTRUCTION DRAINS SHALL BE INSTALLED IN ALL INLETS BUILT WITH PAVING PROJECTS (SEE DETAIL P1575).
6. CONNECTOR PIPE SHALL BE TRIMMED TO THE FINAL SHAPE AND LENGTH BEFORE CONCRETE IS POURED.
7. THE FRAME SHALL BE DETAIL P1564, TYPE 2 AND THE GRATE SHALL BE DETAIL P1565, TYPE 2.
8. TYPES ARE DESIGNATED AS FOLLOWS:  
"R" MODIFIED -- NO WING;  
"R-1" MODIFIED -- ONE WING;  
"R-2" MODIFIED -- TWO WINGS.



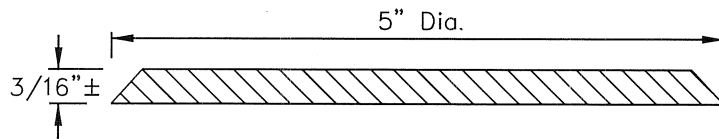
SECTION A-A

CATCH BASIN WALL THICKNESS & DEPTH
<p>T=6" IF V=8' OR LESS.</p> <p>T=8" IF V=8'-1" TO 16'.</p> <p>V=3'-6" UNLESS OTHERWISE SPECIFIED.</p>



### **TYPE "A":**

TO BE INSTALLED IN WET CONCRETE  
DURING CONSTRUCTION



### **TYPE "B"**

TO BE INSTALLED WITH ADHESIVE  
ON EXISTING STRUCTURES

#### **NOTES**

1. Material: Cast Aluminum
2. The Total Width Of Individual Letters To Be Such That Letters And Words Are Equally Spaced And Balanced.
3. Letters To Be 1/2" In Height. Type Of Letters To Be Submitted For Approval.

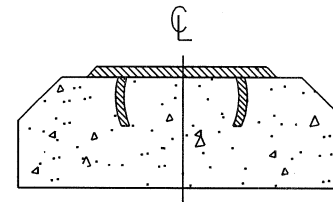
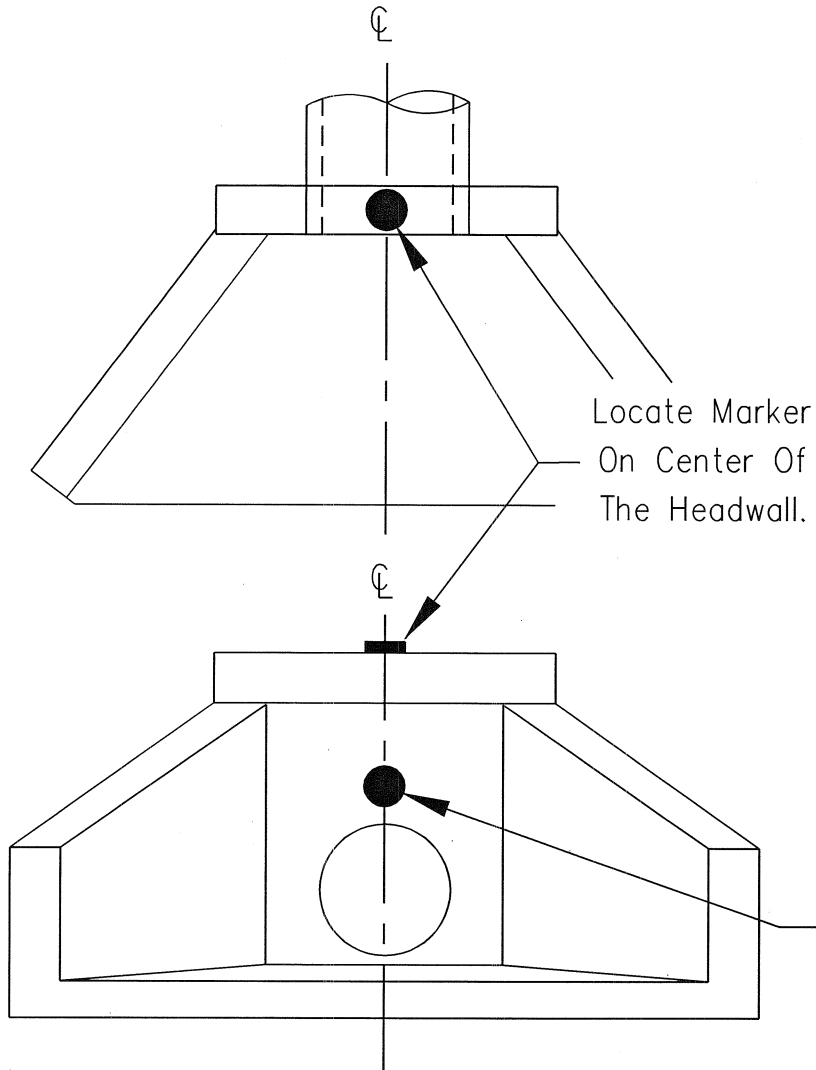


DETAIL NO.  
**2560-1** **City of Scottsdale**  
**Standard Details**

APPROVED BY:  
**Scottsdale Standards &  
Specifications Committee**

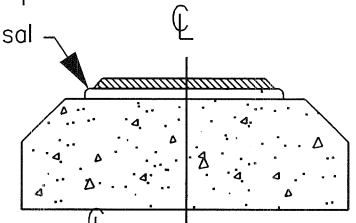
**STORM DRAIN INLET MARKER**

DETAIL NO.  
**2560-1**



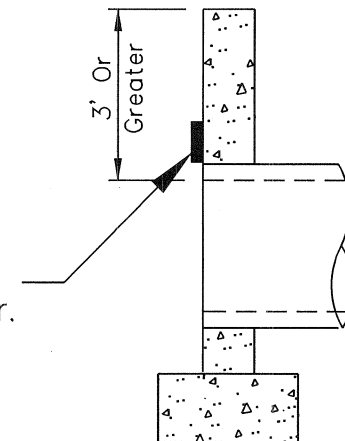
**TYPE "A"**  
TO BE INSTALLED IN WET CONCRETE  
DURING CONSTRUCTION

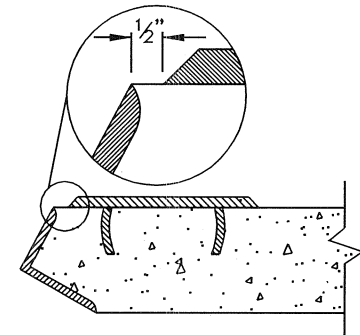
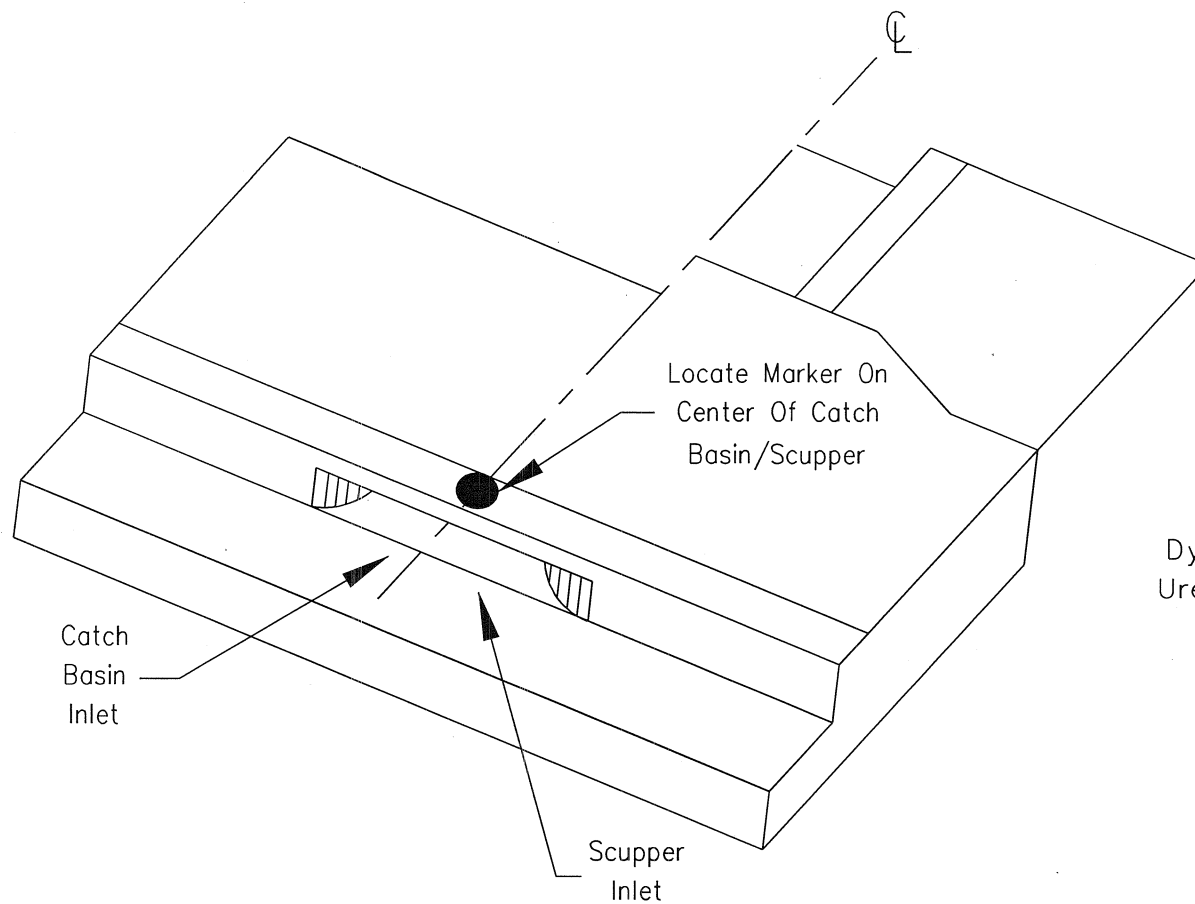
Dynamix #6125-1  
Urethane Universal  
Adhesive



**TYPE "B"**  
TO BE INSTALLED WITH ADHESIVE  
ON EXISTING STRUCTURES

Locate Marker On the  
Vertical Face Of Headwall  
When Face Is 3' Or Greater.  
Center On Headwall.

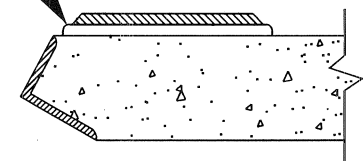




### **TYPE "A"**

TO BE INSTALLED IN WET CONCRETE  
DURING CONSTRUCTION

Dynamix #6125-1  
Urethane Universal  
Adhesive



### **TYPE "B"**

TO BE INSTALLED WITH ADHESIVE  
ON EXISTING STRUCTURES



SIZE OF OUTFALL CONDUIT	FRAME ANGLES	SHEAR PIN CLIP ANGLES	SHEAR PINS	HINGE PINS	HINGE ANGLES	HINGE STD. PIPE	* NO. OF EQUAL BARRIER BAR SPACES (HORIZ.)	NO. OF EQUAL BARRIER BAR SPACES (VERT.)	H (OUT TO OUT FRAME ANGLES)	* W (OUT TO OUT FRAME ANGLES)	A	B
30"	2X2X1/4	4X4X1/4	1-1/8 $\emptyset$	1/2" $\emptyset$	2X2X1/4	3/4"	3	5	34"	20"	SINGLE HINGE CENTERED	
36"	2X2X1/4	4X4X1/4	1-1/8 $\emptyset$	3/4" $\emptyset$	2-1/2X 2-1/2X1/4	1"	4	6	40"	26"	SINGLE HINGE CENTERED	
42"	2X2X1/4	4X4X1/4	2-1/8 $\emptyset$	1/2" $\emptyset$	2X2X1/4	3/4"	5	6	42"	32"	0	0
48"	3X3X7/16	5X3X1/4	2-1/8 $\emptyset$	3/4" $\emptyset$	2-1/2X 2-1/2X1/4	1"	5	7	47"	38"	3"	1"
54"	3X3X7/16	5X3X1/4	2-1/8 $\emptyset$	3/4" $\emptyset$	2-1/2X 2-1/2X1/4	1"	6	8	54"	44"	5"	3"
60"	3X3X7/16	5X3X1/4	2-1/8 $\emptyset$	3/4" $\emptyset$	2-1/2X 2-1/2X1/4	1"	7	9	60"	50"	9"	4"
66"	3X3X7/16	5X3X1/4	2-1/8 $\emptyset$	3/4" $\emptyset$	2-1/2X 2-1/2X1/4	1"	8	10	66"	56"	11"	6"
72"	4X4X5/8	5X3X1/4	2-3/16 $\emptyset$	1" $\emptyset$	3X3X3/8	1-1/4"	9	11	73"	62"	15"	7"
78"	4X4X5/8	5X3X1/4	2-3/16 $\emptyset$	1" $\emptyset$	3X3X3/8	1-1/4"	10	11	79"	68"	17"	9"
84"	4X4X5/8	5X3X1/4	2-3/16 $\emptyset$	1" $\emptyset$	3X3X3/8	1-1/4"	11	13	86"	74"	21"	10"
90"	4X4X5/8	5X3X1/4	2-3/16 $\emptyset$	1" $\emptyset$	3X3X3/8	1-1/4"	12	13	92"	80"	23"	12"
96"	4X4X5/8	5X3X1/4	2-3/16 $\emptyset$	1" $\emptyset$	3X3X3/8	1-1/4"	12	14	98"	86"	29"	12"

\*NOTE: Adjust these values for skewed conduits. Provide 5" maximum opening at each side and between bars.

DETAIL NO.  
**2562-2**

**City of Scottsdale**  
**Standard Details**

APPROVED BY:  
**Scottsdale Standards &  
Specifications Committee**

**BARRIER SPECIFICATIONS SCHEDULE**

DETAIL NO.  
**2562-2**

